



# JOURNAL

OF THE

## Royal United Service Institution

PUBLISHED UNDER THE AUTHORITY OF THE COUNCIL.

Editor - Captain H. GARBETT, R.N. (Retired).

Vol. XLII.—JANUARY, 1898.—No. 239.

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J. J. KELIHER & CO., 17B, GREAT GEORGE STREET (Corner of Parliament Street), S.W.,  
AND 33, KING WILLIAM STREET, E.C.

HODGES, FIGGIS & CO., 104, GRAFTON STREET, DUBLIN.

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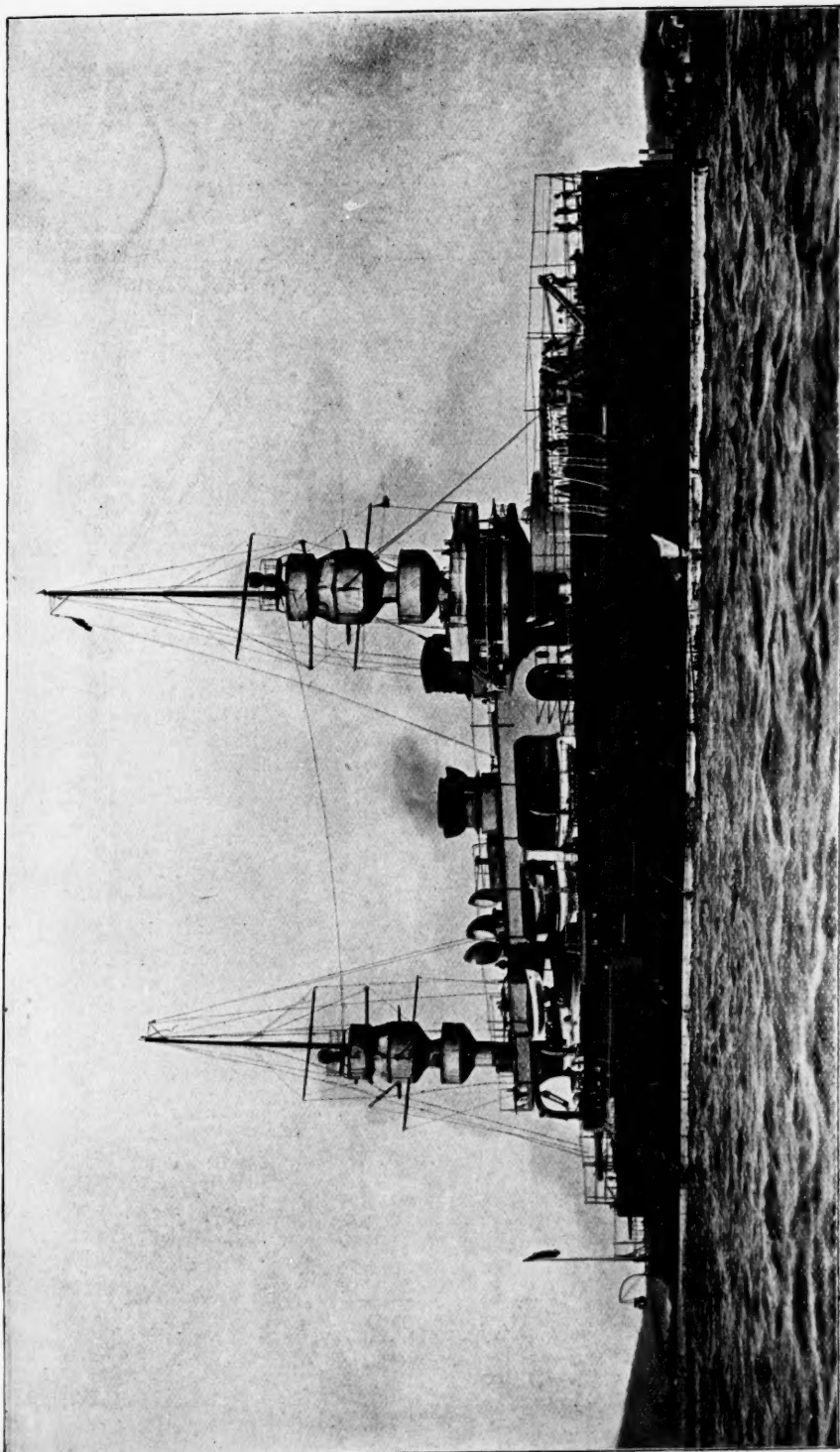
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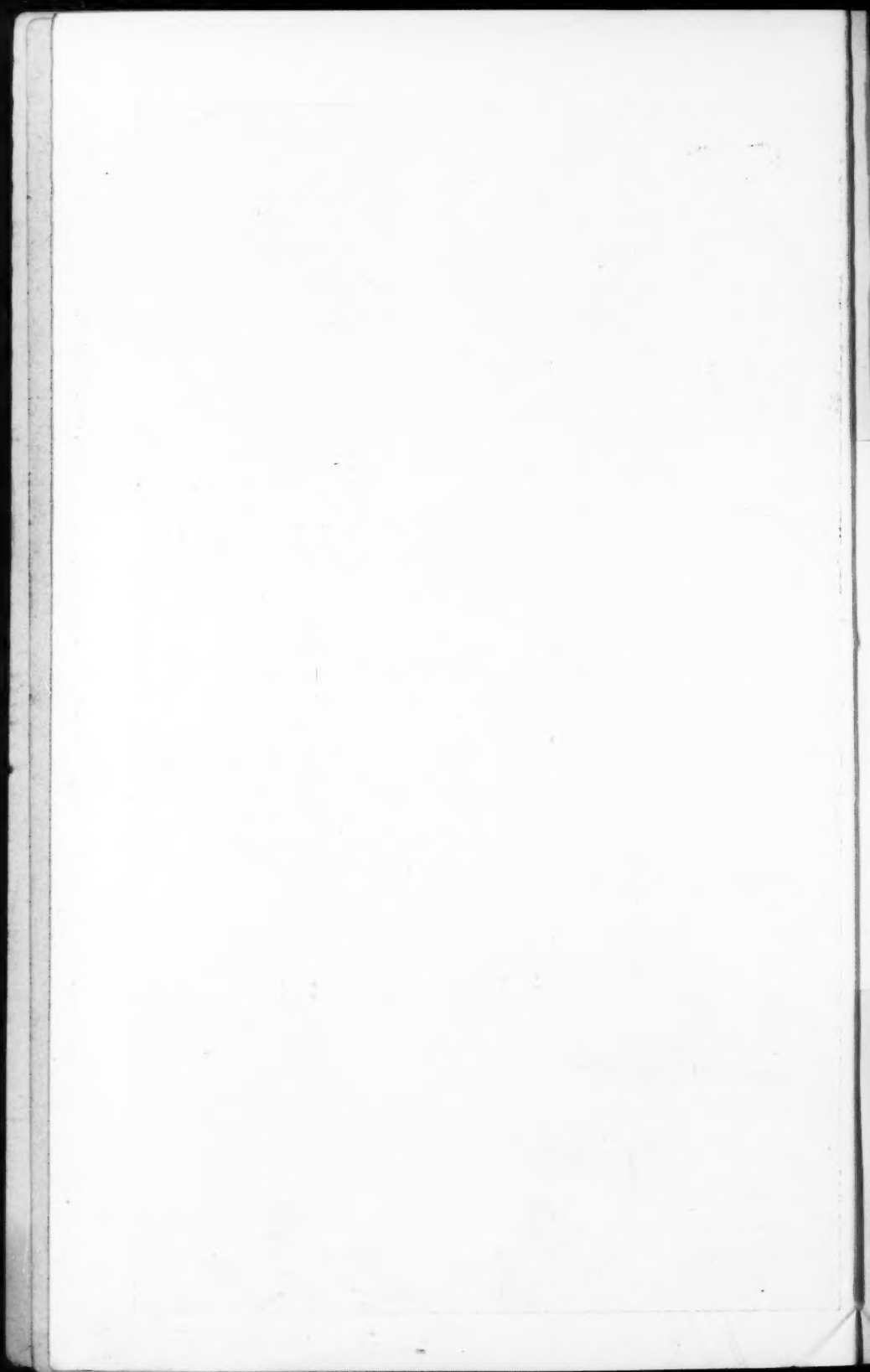




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See Naval Notes, page 82.

The New French First-class Battle-Ship "**CHARLES MARTEL**," 11,880 Tons, 13,500 I.H.P.



**ERRATA IN DECEMBER JOURNAL.**

Page 1527, line 29, for "admirable" read  
"honourable."

Page 1536, line 26, for "loggards" read  
"laggards."

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**NOTICE.**

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& Co., 33, King William Street, E.C.





# THE JOURNAL

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## ROYAL UNITED SERVICE INSTITUTION.

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VOL. XLII.

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*[Authors alone are responsible for the contents of their respective Papers.]*

### THE CIVIL WAR IN THE UNITED STATES. SHILOH;

OR, THE BATTLE OF PITTSBURG LANDING.

6TH—7TH APRIL, 1862.

*By Lieut.-Col. T. TULLY, 4th Volunteer Batt. East Surrey Regt.*

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Thursday, May 20th, 1897.

Lieut.-General E. H. CLIVE, late Commandant Staff College,  
in the Chair.

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TO the present generation of students of military history, it may at first sight appear strange that the history of the American Civil War has met with (comparatively speaking) little attention from those who devote themselves to historical military studies. It is not assumed that military literature dealing with the events of the American Civil War has not been perused, but the extraordinary occurrences in Europe during the years 1866 and 1870-71 diverted the minds of Englishmen from the doings of their cousins over sea to the vast campaigns executed by hosts of thoroughly drilled and organised troops, and carried on, so to speak, next door.

The echoes of the great Civil War had not even partially died away, before soldiers of all nations were electrified by the events of the Six Weeks' War between Prussia and Italy on the one hand, and Austria and her German allies on the other. This campaign presented such startling novelties, that soldiers instinctively turned to it for information, and the Potomac and the Mississippi were a long way off.

Then again the great campaign between France and Germany, now some twenty-six years old, seems to have absorbed practically all the later attention of military students, despite those difficulties which the pursuit of knowledge conveyed in a foreign language must always present to a student.

Furthermore, there is another point of undoubted weight which must be taken into account. The studies of the soldiers of the British Empire are directed, primarily, to the solution of problems attendant upon the march over known ground of disciplined Armies; and secondarily, to the dispositions necessary to meet those savage tribes on the out-borders of civilisation, whose personal courage and contempt for the rules of war demand an entirely special kind of fighting formation on our part.

The first, be it observed, was based upon two assumptions, viz., that highly-trained and disciplined troops are the only pieces in the game of war, and that these could only be got in Europe.

If I may say so, there appear to be two elements of error in the way in which we have regarded the Civil War in America. Firstly, it was perhaps too hastily assumed that the soldiering during that war was almost entirely of the amateur or civilian type; and, in the second place, it was overlooked that, even granting these premises, there is a large civilian or amateur Army on this side of the Atlantic, numbering a quarter of a million of men, to whom the operations of these American troops must, in any case, convey lessons of special value.

The true ground for observation is between these two extremes, for whilst it cannot be ignored that masses of partially-trained troops were sent into action by the United States, even during the later stages of the war, yet amongst the generals, and the combatants in fact of all ranks, especially on the Confederate side, there were men who ought to have been soldiers in the truest sense of the word, if marching and camping and fighting for four years can make anyone a soldier. That such a process is possible, is best illustrated by the fact that the Commander-in-Chief of the Regular Army of the United States of to-day, General Miles, began as a Volunteer, and has fought his way from the Volunteer ranks to the distinguished position he now holds.

I may explain that under very special circumstances during this great war, Volunteer officers who had specially distinguished themselves were granted commissions in the Regular Army of the United States—of course, these commissions being of relatively lower grade than those held by them in the Volunteer Service. I believe there is only one parallel instance of this in the history of the English Army, certainly within the last hundred years. The circumstances were somewhat extraordinary; but on this point I need not delay my audience.

As I have said, to Volunteers especially the experiences of the American Civil War are of the most vital interest; but Regular soldiers may be equally commended to consideration of the operations of the opposing Armies.

This is not the place—and I am not the person—to expand on the relative positions of political and military chiefs. They are clearly defined in this highly constitutional country. But it was far otherwise in the United States in 1861. Trained officers of the Regular Army were ultimately, though with difficulty, able to overbear political generals, and conduct campaigns according to the recognised rules of warfare. Things have changed since then, although the action of President Cleveland in sending Regular troops to crush the Chicago rioters was undoubtedly a step in the direction of military centralisation.

The Regular Army of the United States in 1861 was exceedingly small: so small as hardly to be worth talking about, except for the number of officers it was able to spare for general service. Even in the first real battle of the war, the first battle of Bull's Run (there were two), a scanty band of only 800 Regulars, stood as a rear guard between the victorious Confederates and the road to Washington. Eight hundred Regulars! This is the number of trained troops which the United States Federal Government was able to put in the field on its own chosen ground, in 1861, with the hope that this one stroke might possibly settle all trouble in the future.

It may be necessary for the benefit of those of my audience who may be paralysed at such statements on my part, to explain here that, under Buchanan, the last slave President, his Secretary for War, Floyd, showed remarkable ability in shifting the Federal forces, not to speak of arms and ammunition, guns and ships, from where they might be useful to the North in case of trouble, to where they might be rendered practically useless, or else be captured by the Confederate forces.

Illustrations of this may be sought by those who wish to know more about the subject, in the case of the Navy Yard at Norfolk, and in the operations of that body of the United States troops which, under General Twiggs, surrendered in Texas to the Confederates.

Thus, when the war broke out the Federal Government was almost helpless. The Capitol was in danger of being captured by the Confederates, a Massachusetts regiment was attacked on its passage through the City of Baltimore to defend Washington, and it was by the narrowest chance in the world, and owing to the extraordinary vigilance and promptitude of certain New England Volunteer regiments, that the Capitol itself was not seized almost synchronously with the investiture in office of President Abraham Lincoln, who only reached Washington in safety under very dramatic circumstances.

The political powers of the United States were at sixes and sevens, owing to the then debatable question of slavery; whilst the Regular Army, as an executive force, had practically ceased to exist. The first levy made of 75,000 Volunteers to serve for three months—which, it was thought, would end the matter—was barely sufficient to prevent the capture of Washington and the over-running of the Northern States.

With the first battle of Bull's Run, the North settled down to a more perfect comprehension of the nature of the work in hand; but for a long period politicians had it more or less their own way. And there was

some ground for their action, because, in many parts of the Union, large bodies of loyal Unionists were being overawed or attacked, arms in hand, by the Confederates, and therefore appealed, through their Congressional representatives, for protection at the hands of the central power.

Hastily raised levies were therefore sent here, there, and everywhere. The Great Snake theory was propounded, and the enormous levies raised by the Federal Government were, in the minds of highly-strung newspaper editors, expected, Anaconda fashion, to surround the Confederacy, and to gradually squeeze it out of existence. But the Anaconda theory did not work—there was too much weakness in the joints; and at last the Government at Washington saw that speeches did not win battles, and that, as Acts of Congress were not ending the campaign, they had better let the conduct of the war be placed in the hands of trained professional soldiers, who would take up the business and proceed to work in a regular and scientific manner.

The rules of war are as old as the history of man, and when these were reduced to practice by highly-educated professional soldiers, no wonder that they proved more efficacious than the wild orations of Western politicians, or the hysterical effusions of the Northern press.

The causes which led to the Civil War were complicated. Into the commercial aspect of the quarrel it may be necessary to enter for a few moments; because it partly explains the lines of defence taken up by the Confederacy, who, from the first, had much better ideas of strategy than had the Federals. I am not now dealing with any trans-Mississippi fighting, nor the Red River expedition; neither with those combats in Western Virginia and on the Potomac, which were, so to speak, only accessories to the grand tragedy upon which the curtain rose, at the first battle of Bull's Run, July 21st, 1861.

The Federal capital was at Washington, on the Potomac; and the Confederates selected as their capital Richmond, on the James river, and in the north of Virginia. There their first Congress was opened 26th July, 1861. From Richmond to Washington was not quite 100 miles in a straight line, but it took four years to get over this ground. Richmond and Washington were both close on to 77° W.L.

The political and commercial aspect of the war directly influenced the selection of Richmond as the Confederate capital; because the State of Virginia occupied from the very commencement of the history of the colonies an almost dominant position with regard to its wealth, its dignity, and the number of prominent politicians it had provided for the service of the State. Virginia was also the great negro-producing State of the Union. Virginian slaves were bred and sent south, sometimes being worth as much as £400 each. This, in view of the extinction of the African slave trade, was a most vital point, and determined the ranging of Virginia on the side of the South. In addition to this, there were military reasons for the selection of Richmond; because if the rebel capital had been fixed south of Virginia, the government of that State might have elected to go over to the North



rather than have its territory ravaged by the march of the Northern troops, as a preliminary to an attack upon any other capital such as Montgomery, which might have been selected further south, and the reduction of which would have been attempted by the Northern military commanders. Richmond was, therefore, selected for political and commercial, as well as military, reasons; and Virginia was practically forced into the war on the side of the South.

The first line of defence was, therefore, that which crossed the Shenandoah Valley on the west and struck the sea on the east between Washington and Richmond. This is not the subject of my present lecture. The Eastern battles will, I hope, come later on. Fredericksburg has been most ably dealt with already by Colonel Henderson, but there are many others.

Looking north from Richmond were a large number of streams, which can be noted on any map, each widening out as it flowed east through swampy and low-lying ground—ground most unfavourable for military operations; whilst the lower reaches of the Potomac and James rivers were easily protected against naval attack by torpedoes, and fortifications on the shores. The advance, therefore, on Richmond from Washington was always more or less by the right across the streams high up at such fords as were available; and this continued practically till the end of the war, when General Grant deliberately elected to fight his way through the Wilderness by the left, crossing the James river, enveloping Petersburg, and ultimately isolating Richmond from the rest of the South, by the cutting of the Danville Railroad, thus closing the war.

I mention these facts because, otherwise, it would seem difficult to understand why the great sea-base was not at once used. But it could not be used, for the simple fact that the Federal Government had no Navy fit to do any fighting of a serious character along the coast. If the land forces of the North attempted to seek the co-operation of the Navy, they became entangled in pestilential marshes and alluvial swamps, whilst, moving by their right, they necessarily received no assistance from the sea forces.

The advance from Washington to Richmond was, therefore, a land campaign pure and simple, generally speaking; for General McClellan's arrival at Malvern Hill, with the sanguinary combats which preceded and finished at that battle, was forced upon him, rather than sought. The week's battles of the James River Peninsula were not the result of a settled plan, as was the subsequent advance by General Grant through practically the same district, but the Federal line was almost continuously from Washington to Richmond through Culpeper Court House, Gordonsville, Hanover Court House, Spottsylvania, or Fredericksburg; whilst the rivers Rappahannock and Rapidan, and the North and South Anna, became as well known to the commanders of both sides as are the squares of the chessboard to the practised player. "Tenting on the old camp ground" was a grim reality of constant recurrence.

## THE BATTLE OF SHILOH, OR PITTSBURG LANDING.

Now, turning to the other side, viz., the N.W. line of Confederate defence, it was necessary to protect the slave States on the western frontier and on the Mississippi from attack from the North. Therefore, leaving the Shenandoah Valley, the mountains of the Cumberland and the Tennessee between them and Washington and the eastern advance, where they felt safe, the Confederate generals drew a line (November, 1861) from their left at Columbus, on the Mississippi, to Bowling Green on the right. (*Vide map.*) Bowling Green was the apex of a railway triangle, of which one leg struck Memphis, on the Mississippi, and the other Decatur, on the Memphis-Charleston Railway—a main Confederate artery from the Mississippi to the Atlantic. Columbus to Bowling Green was the true strategic and first line of defence, and one which baffled the Federal commanders for a long time. It was under the command of General Albert Sidney Johnston, with 60,000 men.

Again, Columbus was strongly fortified, and prevented the passage of vessels up and down the Mississippi; and New Orleans, at the mouth of the Mississippi, fulfilled the same duty, until its capture on the 28th April, 1862.

Now, it was when trained professional soldiers were allowed to have their way that the true line of attack was at last determined upon. In the West, vague ideas of forcing the Mississippi and attacking the forts thereon held by the Confederates, floated through the minds of imperfectly informed tacticians, who ignored the fact that a fort with a sea or river front, and open behind, must fall the moment an Army appears in its rear.

General Halleck, who was general in command of the Department of the Missouri in December, 1861, in consultation with Generals Grant, Sherman, and others, definitely settled on the obvious line of advance, which was by the Cumberland and Tennessee rivers, being the centre of the line from Bowling Green to Columbus. This was occupied by Fort Henry, on the Tennessee river, and Fort Donelson, on the Cumberland river, which were about twelve miles apart at this point. Nothing could pass the forts on these two rivers.

It is curious to note the important part the Navy played in the military operations of the West in comparison with its inability to assist the Army of the Potomac. The gun-boats on the western rivers were perfect terrors to the Confederates, whilst the Navy on the eastern coast was of little use till later in the war.

Having decided on the true line of attack, namely, the centre of the Columbus and Bowling Green line, General Grant, under the orders of General Halleck, advanced up the Tennessee and Cumberland rivers, and captured, first Fort Henry, on the Tennessee, then Donelson, on the Cumberland (which was a very extensive work), broke the first strategic line taken up by the Confederate generals, caused the evacuation of Columbus and of Bowling Green, also of Nashville, and compelled the Confederates to fall back on the Memphis and Charleston Railroad, on

which lay the City of Corinth, which was at once occupied in force by the Confederates. Memphis being on the Mississippi, and Charleston on the Atlantic, this railway, passing through Corinth, Decatur, Chattanooga, and Knoxville, became the second line of defence, and of vast importance.

We now see the preparations being made for the next act of the drama in the West.

After the fall of Donelson, General Halleck's orders to General C. F. Smith (vice Grant temporarily superseded), were for the troops to push forward at once with all despatch, and break the Memphis and Charleston Railway at Bear Creek, about seven miles from Chickasaw, on the Tennessee. The flooded state of the country, owing to the rise of water in the Tennessee and Cumberland rivers, rendered this impracticable; but after careful surveys a point was selected by General C. F. Smith—a most accomplished soldier—for the location of the Army on the banks of the Tennessee river, prior to the move to be made on Corinth.

The town of Savannah, on the Tennessee, was selected as the objective in the first place of the Army of General C. F. Smith, who was to be joined by General Buell, who lay 130 miles off at Nashville with an Army of about 40,000 men, General Grant having about 43,000. (*Vide* Beauregard Memoirs, p. 280.)

It was intended that these two Armies should join and advance on Corinth, for which purpose a place called Pittsburg Landing, about twenty miles from Corinth and between Lick Creek and Snake Creek, was selected on the left bank of the Tennessee, by General C. F. Smith, where the Armies were to be concentrated prior to a grand advance on Corinth.

Now it happened that the Confederates were singularly well served about this time by Generals Beauregard and Albert Sidney Johnston, associated for the purpose of Confederate defence, and by such fiery fighters as Bragg, Hardee, Polk, and others of tried ability.

The generals commanding on both sides were placed in positions of singular difficulty, each waiting for reinforcements. Beauregard hoped to draw Van Dorn and Price to him from Columbus, Fort Pillow, and elsewhere, and with this united force make an overwhelming attack on Grant at Pittsburg Landing on or about the 4th April.

Grant, who had replaced General Smith on 17th March, was with 43,000 men, on his side expecting the arrival of Buell with 40,000 men. These were delayed in an almost inconceivable manner by terrific rains and swollen rivers. It took something like seventeen days to cover ninety miles—namely, Columbia to Savannah.

Beauregard, however, decided that he would not wait for his reinforcements, but would strike Grant at Pittsburg Landing before Buell had time to join him; and he almost succeeded in his plans, and concentrated for this purpose at Corinth, twenty miles from Shiloh.

The place immortalised in history as the battle-field of Shiloh is a small plateau, with its back to the Tennessee, flanked on the left-hand side by a small ravine, also by Lick Creek, whilst it was protected on its right by Snake Creek, the outfall of these two creeks being four

miles apart on the Tennessee. Into Snake Creek, at an angle about 40° with the Tennessee river, ran Owl Creek. The configuration of the country was such that an enemy coming from the south *must* attack the Federal position in front. This position, which was 219 miles from the mouth of the Tennessee river, was selected by General C. F. Smith as capable of holding 100,000 men, and was one the flanks of which could not be turned. It was fortunate that this was so.

Here between 20th March and 6th April assembled the army of General Grant, consisting of about 43,000 men; General Grant himself remaining at Savannah, with the object of hurrying up General Buell, and to bring about the necessary concentration, without which there was a prospect of the attack on Corinth failing altogether.

There was a slight temporary difficulty caused by the unnecessary supersession of General Grant by Halleck in favour of General C. F. Smith, who was, however, a very able officer. General Smith's death, however, gave Halleck no choice, and General Grant was restored to the command 17th March, 1862. Prior to this, however, General Sherman had received orders from Halleck to advance up the Tennessee and break the Memphis and Charleston Railway at Bear Creek *via* Chickasaw; this, of course, with the idea of preventing the junction of Johnston with Beauregard, Johnston being about this time at Murfreesborough, having evacuated Nashville on the fall of Donelson.

General Sherman got up the river as far as Chickasaw, whence he attempted to reach the Memphis and Charleston Railway; but the country was so flooded that the cavalry had to return to avoid being drowned. Several men and horses were carried away by the floods which overran the country. Beauregard is satirical on this point. Sherman, therefore, fell back on Pittsburg Landing, whence Corinth, the great tactical point, on the Memphis and Charleston Railway, could be advanced upon by practicable roads.

The tactical disposition of Sherman's command on the battle-field of Shiloh clearly demonstrated why General Grant had such confidence in him, and, incidentally, the confidence Sherman had in himself. Sherman had a raw division; but General Grant says in his Memoirs that this deficiency was made up by the superiority of the commander.

He was, therefore, placed on the right front on the ridge dividing Snake and Lick Creeks, occupied by a solitary log meeting-house called Shiloh; two brigades of Sherman's division being respectively right and left of the Shiloh road, as I will call it. The third brigade was placed under Stuart to cover the extreme left of the position on what was called the Hamburg road over Lick Creek. The fourth brigade of Sherman's division was retired to the right to cover the Purdy road and the bridge over Owl Creek, over which Lew Wallace's division of 5,000 men was expected. (See Map A.) In rear of the left of Sherman stood the division of McClelland, consisting of troops which had been fairly hardened in war, as far as Western troops could be at that stage.

On the left of Sherman and McClernand lay Prentiss with another raw division which had been scrambled together on the ground and had never fired a shot. The divisions of Hurlbut and W. H. L. Wallace were behind Prentiss and McClernand respectively, and covered the Landing. This made practically a continuous line from Lick Creek on the left to Owl Creek on the right. The water in these streams being very high, the enemy was compelled to make a direct front attack.

The division of General Lew Wallace was on the other side of Snake Creek; the written instructions to him being that he was to cross Owl Creek by the Purdy road, and support the right of Sherman, but beware of an attack on his right. (Map A.) General Grant was uneasy here, owing to reported movements of troops on the Mobile and Ohio Railway. This plan was, however, upset by the fierce attack of the Confederates, who drove Sherman back, so that Lew Wallace was unable to come into action till the second day of the battle—7th April—and then over the Crump Road Snake Creek bridge.

Sherman's Memoirs state the battle of Shiloh was in no sense a surprise on the 6th April, tactically speaking.

Strategically speaking, it was a surprise, because, quite unforeseen to the Federal commanders, who thought the enemy were at Corinth, Beauregard and Albert Sidney Johnston had collected, undetected, the whole of their troops within short range of the Federal troops, Johnston coming by rail from Murfreesborough, *via* Decatur, and but for bad weather and failure of orders (3rd April, p. 275-276, Beauregard) would probably have utterly defeated Grant's command on the 5th April, before Buell had time to come up.

So near to each other were the opposing forces that, hearing a loud beating of drums about the hour of tattoo, 5th April, and believing it proceeded from his lines, General Beauregard immediately despatched a staff officer with orders to suppress such thoughtless and imprudent sounds. The staff officer returned shortly afterwards, and reported that the noise General Beauregard had heard, and was desirous of quieting, came not from his troops, but from the enemy's encampments in his front. Later in the evening a Federal assistant-surgeon and his orderly, riding out on some night excursion, crossed the Confederate picket lines, and were captured. They were speechless with astonishment when brought to Generals Johnston and Beauregard, at beholding so large a force within striking distance of their own camps, where all now was silence and repose, and where none suspected the approaching storm. From them the Confederates learned that General Grant had returned for the night to Savannah, and that General Sherman commanded the advanced forces. No other information of importance was obtained from the two prisoners.

"Such was the lack of discipline in the largest part of the Confederate forces; also that, despite the strict orders given to enforce perfect quiet among our troops, drums were beaten, bugles blown, fires kindled here and there by many regiments, and firearms discharged at



different points in their rear during that eventful night. These and other bivouac noises should have betrayed to the Federal generals on the first line the close proximity of their foe. That such was not the case is due, no doubt, to the fact that they fell into an error similar to that which General Beauregard and others of our officers had made, and attributed these untimely sounds to their own troops." (Beauregard.)

"Silent in Shiloh woods yonder," writes Swinton, "within sight of Grant's camp-fires and within sound of his noisy pickets, lay, grimly awaiting the dawn, 40,000 Confederate soldiers. It was the third of the three great Armies drawing together that night towards Pittsburg Landing—an Army supposed by its fourscore thousand dormant foes, from commanding general to drummer-boy, to be lying perdu behind its Corinth fieldworks, twenty miles away. It had crept close to the Union lines, three-fourths of a mile from the pickets, less than two from the main camp—so close that throughout the night the bivouac hum and stir and the noisy random shots of untrained sentinels on the opposing lines indistinguishably mingled." That a Confederate council of war was held within two miles of Shiloh on the 5th April seems to confirm this.

As a matter of minor tactics, it is claimed there was no surprise, because Sherman clearly describes the boldness of the Confederate cavalry in coming up to his lines on the 4th and 5th April; also some outpost fighting in which Federal troops were captured, which Beauregard considers a mistake on *his* side. But that Grant was surprised cannot be questioned.

"During the advance of 4th April," says Beauregard, "a reconnaissance in force was injudiciously made by a part of the cavalry of the Second Corps, with such audacity—capturing an officer and thirteen men of the enemy—that it ought to have warned the Federal commander of our meditated attack."

Generally speaking, however, the Federal troops were under arms, as Sherman says, and ready for the enemy when they came on with almost resistless force on the morning of 6th April, 1862; this, although entrenchments had not yet been adopted in the West.

I may here refer to the extraordinary mistakes made by the Confederate staff in the issue and circulation of orders, 4th April, by which Polk's division was placed on the roads in front of Hardee and Bragg, with the result that the attack on the Federals, which ought to have come off on the 5th, was postponed to the 6th. If the general staff of the Confederate Army had caused orders to be properly circulated on the 4th, Grant's force would have been attacked on the morning of the 5th, instead of the 6th, and perhaps swept into the Tennessee, because the attack would have been twenty-four hours ahead of the time when Buell's force arrived to the rescue.

Beauregard speaks thus on this point on page 276 of his Memoirs:—

"The delay which had marked the outset was followed by unwarrantable tardiness in the general conduct of the march, so much that, by the evening of the 4th, the forces bivouacked at, and slightly in advance of, Monterey, only ten miles from Corinth. It was not until

two o'clock p.m. on the 5th that they approached the Federal position, near the Shiloh meeting-house. The whole distance travelled was not more than about seventeen and a half miles. True, there were heavy rainfalls during the night of the 4th and the early part of the next day, which made the roads somewhat difficult, not to speak of their narrowness, and of the fact of their crossing a densely-wooded country. But these causes account only in part for the slowness of the march, which was mainly attributable to the rawness of the troops, and the inexperience of the officers, including some of superior rank." It is possible, however, that Beauregard may have been too cautious, and to have made the mistake that many other generals have made, in assuming that the enemy knew as much as he did himself.

The Federal forces had undoubtedly made a movement by their left flank to cut the Memphis and Charleston Railway, and Beauregard and Johnston possibly hung back rather in the hope that the Federals would expose their right flank. Ultimately they had to fight Grant on ground of his own choosing, and with the consequences which I shall proceed to describe. An extract from Beauregard's own Memoirs on this point is worth repeating:—

"From his experience in the war with Mexico, and more recently at Manassas and Centreville, he considered Volunteers, when well commanded and occupying strong defensive positions, equal to Regulars, if attacked in front, as Federals then would be by us. Under these circumstances, and for the reason that the enemy being on the alert, Buell's junction would no doubt be hastened, he was no longer in favour of making the attack; but favoured inviting one by turning this offensive movement into a reconnaissance in force, to draw the enemy after us nearer to our base—Corinth—and thereby detach him further from his own at Pittsburg Landing. Somewhat similar strategy had been resorted to by Wellington in 1810, when, advancing to attack Massena at Santarem, he unexpectedly found that able officer on his guard, ready for battle on ground of his own choosing, and much stronger than he had anticipated. After making some demonstrations in front of his wily adversary to draw him away from his stronghold, Wellington did not hesitate to retire without giving battle." (Beauregard, page 279.)

If the Confederates had advanced on Crumps Landing by the left of Snake Creek it would have been better for them. The Western troops had not yet begun entrenching themselves, though Beauregard thought they had.

Sherman's statement is that, riding out with his staff very early in the morning of the 6th April, a volley was fired at him, killing one of his orderlies, and that immediately afterwards he saw great masses of the enemy's infantry with bayonets fixed, moving steadily towards his left, upon which the whole force of the first rush of the Confederates immediately expended itself.

McClernand immediately hurried up three regiments to help Sherman's left, but the advancing Confederates passed beyond even this, and the real blow fell upon the division of Prentiss. This division, including

its commander, was captured bodily about five o'clock on the afternoon of the 6th April—that is to say, in the first day's fight. General Prentiss was unable to fall back, as did Sherman, and was simply taken *en bloc*.

It was useless for Sherman and McClelland to hold their position whilst their left was turned by a force between them and Prentiss. They therefore fell back, roughly speaking, about a mile from the position they occupied in the morning, and the tactical advantages of this are obvious. Lew Wallace was expected to come across the Purdy road to the right of Sherman, but it was equally possible for him to cross the Crump Landing Bridge over the Snake Creek. Sherman, still hearing nothing of Lew Wallace, together with McClelland, again fell back, covering the bridge over Snake Creek, and also covering Pittsburg Landing itself.

General Beauregard on his side was not idle, and the heavy masses of troops which General Sherman saw on his front on the morning of the 6th April were the result of the vigorous efforts which Beauregard had made for a concentration intended to smash Grant before Buell could come up. In the previous month, Beauregard, who was a singularly able soldier, but most miserably backed up by the War Department of the Confederate States, seems to have devoted himself to this business. He strained every nerve to produce a great concentration, and that quickly, because he knew that if Buell and Grant succeeded in uniting, he would be outnumbered by two to one. He was, however, miserably supported, except by General Albert Sidney Johnston, who, with rare magnanimity, and although Beauregard's senior, backed him up in every way. Johnston, after the fall of Donelson, was retreating south from Bowling Green through Nashville by Murfreesborough, and, at Beauregard's request, came by Decatur, and joined Beauregard in time to make that impetuous assault on the lines of Grant, which has already been partly referred to.

It must be understood that on the Confederate side it was neck or nothing. They knew exactly the stake they were playing for; they knew that every hour counted; and they crept up within two miles of the Federal lines on the evening of the 5th April, and totally and absolutely surprised Sherman, according to his own confession, on the morning of the 6th April.

There never was any mistake about the manner of the advance of the Confederate infantry. The whole manhood of the South was practically in the ranks of the Confederate Army, and remained there; whereas, from the North fresh levies were constantly coming forward, and at the battle of Shiloh there were men in the fighting line of the Northern side who had not learned how to load their muskets. This was the secret of the overwhelming success of the first rush of the Southerners at the battle of Shiloh.

It appears here to be desirable to carefully consider the map of the theatre of war, and to realise again the exact relative positions of the troops engaged and not engaged.

Beauregard, at Corinth, had drawn to himself Albert Sidney Johnston, from Murfreesborough. Columbia was half-way between Murfrees-

borough and Pittsburg, which point General Buell was endeavouring to reach with 40,000 men. From Nashville to Columbia was fairly easy going for Buell, but from Columbia to Savannah was quite different.

I have speculated myself on what would have been the effect of the advance of, say, 2,000 men of Albert Sidney Johnston's force from Murfreesborough on Columbia, at the critical moment when Buell was starting, and question whether the known and cautious temperament of that commander would not have stopped him, and deprived Grant of the reinforcements which so opportunely reached him on the 6th April.

However, Johnston did join Beauregard and, combined, they advanced on Grant.

Further, but for the mistakes of the Confederate adjutant-general in the distribution of his orders on the 4th April, Buell would not have reached Grant in time to help him. But if Johnston had attacked Buell with a small force from Murfreesborough, Buell would probably not have reached Savannah till a week later, under this attack by Johnston on his rear.

Before returning to a discussion of the exact tactical disposition of the troops on the field, it cannot be too strongly remarked that for the selection of Pittsburg Landing, Grant was in no way responsible. He had been superseded by Halleck from the 4th to the 17th of March, and was practically out of office. General C. F. Smith, who was in command, had been ordered by Halleck not, under any circumstances, to engage the enemy, or to bring on an engagement—hardly the sort of instructions to send with a superior against an inferior force.

Both Grant and Sherman continuously urged excuses in favour of their not entrenching their position, stating that drill was more necessary than digging in the forces of that day. But in none of the books on the war that I have yet read have I found a satisfactory explanation of why a cavalry screen was not thrown out in front of Pittsburg Landing to the extent of three or four miles. There does not appear to have been any screen at all; nor does it appear that there was any scouting worth talking about.

Beauregard held his men in hand strongly, and says in his Memoirs, that a reconnaissance in force was injudiciously made by the Confederates on the 4th April; that the Federals knew of this, and that when they sent out a strong detachment to see what it was all about, they simply retired when artillery opened upon them—this, although Sherman distinctly states that he believed that the artillery were only in company with cavalry. It is therefore perfectly clear from Sherman's Memoirs, that the first intimation that he had of infantry being at hand was upon the morning of the 6th April, when a volley was fired at him, killing one of his orderlies, and so forth.

If I repeat these observations it is to impress them most strongly upon those amongst my audience who may not yet have realised the fact that Grant was hopelessly surprised in the field at Pittsburg, and that, with all Sherman's abilities, he cannot personally be acquitted of being primarily responsible for this.

Of course, it may be argued that the game of war was only just beginning; but Sherman, Grant, and the majority of the generals on both sides were West Point men, and might have remembered the elementary rules of warfare. Shiloh is the only battle as to which Grant in his *Memoirs* seems anxious to offer detailed explanation.

Beauregard's excessive caution in going slowly up to the final assault was justified by the belief, which he not unreasonably held, that the position was entrenched. If it had been entrenched, Grant undoubtedly would have held his own and defeated Beauregard without the assistance of Buell. But this was not to be.

Blind fortune, aided undoubtedly by hard fighting, favoured the Confederates most materially on the first day. It is now admitted that an attack on Crump's Landing—that is to say, on the left of Snake Creek—would have been sounder, tactically speaking, as it would have compelled the Federals to fall back from Pittsburg to the other side of the Tennessee at Savannah, or attack the Confederate right across Owl and Snake Creeks, which was not practicable. The Confederates appear to have leaned to their right, and to have intended to rest on Lick Creek heavily, to sweep the plateau from Snake to Lick Creeks, and to drive the Northerners back on to Pittsburg Landing, and practically capture or destroy the whole Army. This, if they had had 60,000 instead of 40,000, they might have done. But fortune was against them in giving them only equal numbers with which to attack an enemy with its flanks absolutely safe.

Now leaning, as I have said before, to the right, quoting both Sherman and Beauregard, the left of the Confederate line barely touched the centre of Sherman's force, so that McDowell, on his right, was untouched, and Cleburne's brigade, the left of General Hardee's line, was moving single-handed (Beauregard, p. 287) against General Sherman's right centre, and was being overlapped by his right. Cleburne was repulsed with heavy loss, and it was here that the 6th Mississippi lost 300 killed and wounded out of an effective force of 425 men. These American men, both North and South, may not have been well drilled, but they knew how to fight.

Sherman's *Memoirs* say (p. 264) that he saw the glistening bayonets of heavy masses of infantry on his left front at 8 a.m. On p. 265 he states that the enemy designed to pass his left flank, and to fall upon Prentiss and McClernand. Now it was here that the Confederates leaning to their right, as they did, obliquely to the line of the Federal defence, the three brigades of Confederates, led by Gladden, Hindman, and Wood, fell with most tremendous force upon Prentiss's division, backed up by Chalmers's brigade, which was thrown forward from the second line. These four brigades, driving heavily against Prentiss, thus compelled Sherman to withdraw, still keeping touch of Owl Creek on his right, but too late to prevent the enemy forcing their way between himself and Prentiss, who, though heavily reinforced by McClernand and W. H. L. Wallace, found it almost impossible to maintain his position. This inclining



obliquely on the part of the Confederates was accentuated very much by the retirement of Sherman along Owl Creek, when he found that Lew Wallace was not coming up on his right, and that his left was likely to be turned by the Confederate centre. Finding Lew Wallace to be out of the fight, as far as that morning was concerned, he fell back; with the immediate result that W. H. L. Wallace and Prentiss, in the centre, were fiercely attacked by the whole of the Confederate left and centre. The Confederates closed in almost at a right angle on Prentiss, and fought with the greatest desperation in front of W. H. L. Wallace, forcing his division back, killing the general himself. The 18th Louisiana in this struggle lost 207 officers and men killed and wounded. With Wallace's brigade driven back, and the general dead, Prentiss hung on too long, and was straightway enveloped and the whole division captured, amidst ringing cheers from the victorious Confederates. The Confederate lines had almost come to face each other in the centre at this time—so much so that the 27th Tennessee fired a volley into Pond's brigade of their own side.

After the capture of Prentiss, Jackson was committed to the attack on a strong position on the Federal left which had been so powerfully armed by Colonel Webster with artillery; and here came in the wise prevision of General Grant, for his men had ammunition, while Jackson's brigade had only the bayonet to rely on over almost impregnable ground. Their ammunition had been exhausted.

If I have not before this referred to the death of General Albert Sidney Johnston and the disastrous effect it had on the Confederate troops, it has not been without a reason. It is to show how important it is to know where generals can be found quickly.

Johnston was senior in rank, and was in practical command of the whole of the troops. Beauregard had been sent to advise and assist him, but the battle of Shiloh was fought as planned by Beauregard. Yet Johnston was the senior, and naturally was in command. When struck by a rifle bullet he fainted, and ultimately fell dead from loss of blood. General Beauregard could not be found for over three-quarters of an hour, and was consequently in ignorance of what had happened. Had he been instantly on the spot, or could have been quickly found, the temporary paralysis caused to the Confederate side by the death of General Johnston on the 6th April might have been prevented, and the attack might have been pressed home before Nelson's division of Buell's army had time to cross the river and come into action.

Battles are so much questions of minutes, not to say quarters of an hour, that all these points must be carefully considered in forming an opinion as to what might have happened under other circumstances in connection with this historic struggle.

That Albert Sidney Johnston had, with a true general's instinct of where the fighting would be heaviest, placed himself at the point of danger, is proved by the fact that he was killed in this struggle with W. H. L. Wallace and Prentiss, and in front of the 9th Illinois Infantry, of which the colour company was commanded by now Colonel Hawes,

of the 9th Illinois, and which regiment, out of 578 officers and men, lost 387 killed or wounded in the first day's battle of Shiloh. After Johnston was wounded he was taken into the ravine a few paces in front of K Company of the 9th Illinois, where he died. Johnston, however, by the charge that he led forced back this gallant regiment from the position they had taken up originally, but not before they had covered the ground with killed and wounded in the proportions I have stated.

It may be mentioned that many of the regiments on the field of Shiloh were imperfectly acquainted with even how to load their muskets or to engage in the ordinary drill of discharging them. The division of Prentiss was especially weak in this respect. Yet an estimated loss of some 2,000 men was reported in Prentiss's division, which had been actually made up of hastily arriving levies, and got into shape on the field of Pittsburg itself. In the six divisions, in killed and wounded alone, 10,606 men were lost in the first day's fighting of this dreadful battle.

Draper says (p. 304) that this battle was made the subject of the most extraordinary misrepresentations. A very common or ordinary form of accusation against unsuccessful generals all through the war—Trobriand "Four Years with the Army of the Potomac," for example—seems to suggest that when any general was defeated or made movements which were not comprehended by his subordinates, he was necessarily incompetent or disloyal. These tales were freely passed round from both east and west until hardly anyone was safe. Next, with regard to the battle of Shiloh, it was stated that General Prentiss was captured in his shirt. He must have taken a long time to dress, considering that he began fighting at 8 a.m. and was only taken at 5 p.m.

Beauregard says that General Grant arrived on the battle-field about 2 p.m. As a matter of fact, General Grant was at the front at 8 a.m.; but, like the able general that he was, he saw that whilst the ground was being temporarily held by his brave though somewhat raw troops, the supply of cartridges was more important than his presence, and he accordingly went back to the Landing and organised an ammunition train, which, there is no hesitation in saying, afterwards prevented a disastrous rout. The new troops fired away their ammunition so fast and so far over the heads of the Confederates, that but for General Grant's wise provision they would have been out of cartridges and disastrously beaten early in the afternoon. As it was, more than one regiment had to retire from the fighting line to fill its ammunition boxes from the convoy which Grant had organised, before they could again take their place in the firing line.

The capture of Prentiss's division was undoubtedly the turning-point of the day's fight, but Prentiss's division would not have been captured but for the fact that the Confederate fighting line was oblique to the Federal line, and that the widening curve of Lick Creek drew the Confederate line to that side, thus leaving Sherman partially out of the fight, and enabling the Confederates to break through both on the right and left of Prentiss, and ultimately capture him. It was fortunate that

Nelson's division of Buell's army was at hand to repair this disaster. Step by step the Federals were pressed back, until Nelson's division, arriving opposite Pittsburg Landing, found the Northern forces jammed on a small semi-circle on a ravine, and left of the Landing, which was powerfully held by artillery. I may here refer to the bridge over Snake Creek, by which Lew Wallace's division was expected, and over which he ultimately came on the night of the 6th April, bringing an extra 5,000 men into the field.

The rear of an Army is never the best place from which to get an impression as to what is going on in front. There were thousands of Confederates plundering the Federal camp, and there were many thousands of Northern men packed under the bluffs of the Landing, frantic with excitement, and, in default of transport, unable to cross the river and fly. General Buell, seeing this painful spectacle, asked Grant what arrangements he had made for securing his retreat; and the difference in the two commanders is evidenced at once in Grant's reply—that he had not despaired of whipping the enemy yet.

Now, on the left of the position of General Grant, an inspiration of Colonel Webster, of the artillery staff, had absolutely saved the situation. There was a ravine running from the Tennessee which protected the left of the Federal position. Upon this Colonel Webster hastened together all the available artillery he could get until he had obtained some thirty or forty guns from the Landing and from the defeated brigades as they fell back, and, manning them with such men as he could gather together, officers and men, including the surgeon of the 1st Missouri Artillery, these guns were worked to such purpose that the desperate efforts of the Confederates to break in on Pittsburg Landing and complete the rout were hopelessly defeated. Before night fell Nelson's division had crossed, and had deployed on the right of, and in support of, Webster's artillery; and the sight of these new regiments, accurately drilled, moving in perfect order with glittering bayonets, at once restored new hopes and energies to the Northern troops and dispirited the Confederates.

The day was saved. The 7th of April had still to come. (*See Map B.*)

During the whole of that night the gun-boats "Lexington" and "Tyler" dropped heavy shells every quarter of an hour into the woods in front of the Federal position. The bursting of these shells, whilst encouraging and inspiring the Federals and stimulating the advancing divisions of Buell, which were rapidly coming up, carried despair into the hearts of Beauregard and the Confederate troops, who clearly saw that the game was up.

The night of the 6th April, 1862, was indeed terrible. Over a front of nearly four miles and a depth of about two miles the dead and wounded lay thick, whilst close up to the Federal position, and under the guns of the "Lexington" and "Tyler," were hundreds of wounded men writhing in pain and watching the slow advance of burning woods, which seemed at one time likely to consume them. The rain, however, which fell heavily, mercifully spared them this final agony.

Grant and Buell had a short conversation, and then Grant visited every divisional and brigade commander on the field, informing them that the advance was to be vigorously pressed on the morning of the 7th. The news of the arrival of Buell's army spread joy and confidence throughout the Federal ranks.

Swinton (p. 119) remarks that Grant's star was fixed in the ascendant. And so it chanced that the Confederates, in sweeping away Prentiss on the Union, had been thrown chiefly to the Union left, where a precipitous wooded ravine—deep, and impassable for artillery and cavalry, and difficult for infantry—interposed between the victorious Confederates and the stores at the Landing, transports, etc. (*See Map B.*) I have, however, already pointed out that this was the result of the tactical disposition of the Confederates at the beginning of the day. That oblique line of theirs, and their hugging the shore of Lick Creek, whilst on the one hand it secured the capture of Prentiss's division, yet on the other hand was their hopeless undoing, for they were brought up "all standing," as the sailors say, by a position as strong in its way, relatively speaking, as were the Lines at Torres Vedras, or Maryes Heights in that battle of Fredericksburg wherein General Burnside was so disastrously and hopelessly beaten. (*See Map B.*) However, whether the Confederates' advance was tactically erroneous, as covering too wide a front and missing Sherman's right, or whether their success with Prentiss led them into the mistake, the result was the same—they were checked on their right, and at night they were turned back. All that night General Grant, who had a very complex character, lay out in the rain. He could never bear to look upon suffering, and although afterwards called "The Butcher" by the South and by many Northerners, the sight of the wounded, who were being treated in a small hut to which they had been carried, was so painful to General Grant that he lay out all night, himself suffering much pain from a sprained ankle caused by the fall of his horse a day or so before the battle.

It may here be mentioned that General Grant, who was probably one of the finest horsemen in the United States, and who, I believe, jumped a higher bar at West Point than any other horseman of his time—had his horse fall with him on the dark and rainy night on the 4th April over some logs as he was going down to the Landing. About this fall there were many stories current in the North, and, of course, all equally detrimental to the character of the General, and about as true as remarks of this kind generally were. However, he lay in the rain, as I have said, waiting for morning. Grant was a very great man indeed, and took little outward notice of these things. It is doubtful if any one knew, or ever will know, the innate nobility of mind of this great captain.

During the night General Beauregard—a number of whose troops had disappeared from the field, actuated by the same impulses as were those of the Northern force who crowded the banks of the Tennessee—having all along based his sole chances of success on striking Grant before Buell came up, had practically made up his mind that the game was lost. The night was so dark and stormy that it was found impossible to

properly collect and organise all the commands; and on many parts of the field (Beauregard, p. 308) fighting had been protracted even after dusk because Beauregard's orders to stop fighting could not be communicated and carried out. Yet he made a gallant fight for it, relying on the prestige of the victory of the previous day and the disposition of the troops; but at the same time he had abandoned his tactics, and, knowing full well that he had not the least chance now of assaulting the Federal lines, he converted his attack into a defensive fight for a double reason: (1) that by doing so he placed himself closer to his rear guard of stragglers and plunderers, who were promptly re-organised into line of battle; and (2) to cover the retreat of his waggons and that awful load of wounded men which it became his duty to convey to Corinth to prevent them falling into the hands of the Northerners. Therefore he fell back during the night, whilst the line of the Federals on the morning of the 7th April may be considered from the point to which they were pushed forward by Grant and Buell, and indicated on Map C. On the extreme right was the untouched division of General Lew Wallace; on the left rear of Wallace was Sherman, on whose left again was McClernand, and on his left Hurlbut. This practically was what was left of Grant's army. To the left and in front of Hurlbut was McCook, with a brigade which included three Regular battalions and one battery of Regular artillery. On his left again was Crittenden's division, and on the extreme left, on the Hamburg road, was Nelson.

Grant, in his Memoirs, says that very few men were hurt of Buell's army on the evening of the 6th—some half-dozen, in fact. The Confederates lost over 10,000 men in the first day's fighting, and Grant had lost, in killed and wounded, about the same number. The total loss in Buell's army was about 1,900 on the 7th April.

But Beauregard was bound to stand and fight on the second day, although he knew that the Fates were against him. An eye-witness—an impressed New Yorker—gives a terrible description (p. 302) of the retreating host, which extended about seven or eight miles along a narrow and almost impassable road—this in a terrible storm. A cold, drizzling rain closed the day, and turned to hail. Three hundred soldiers died during this awful night, and it is said that 3,000 died before Monterey was reached after the second day's battle.

The battle of the 7th April was opened at half-past 5 o'clock by skirmish firing near the Tennessee, which warned General Beauregard. This was Nelson's division advancing against General Hardee. On the left was General Bragg. Between Hardee and Bragg should have been the positions of Breckenridge and Polk; but Polk was missing, and there was a gap in the line. General Beauregard was in great tribulation about Polk, and was under the impression at one time that he had been captured. But General Polk does not seem to have been a success. He had blocked the road on the 4th by a misinterpretation of orders, and had caused that fatal day's delay in Beauregard's attack to which I have already referred. On the night of the 6th he appears to have retired to his bivouac of the night before—a long way to the



rear—for the purpose of replenishing his provisions and ammunition. He ultimately took his place in the line, and did some good fighting. But two tactical errors of this kind within two days must be taken as a high average even for partially drilled troops. General Polk had been a bishop, but threw down the crozier to take up the sword. He was killed at Kenesaw Mountain by a shell fired from a Northern battery during Sherman's final advance on Atlanta.

Nelson's attack was followed by that of Crittenden and McCook, who advanced by their left. But General Sherman appears to have remained partly inactive for some hours. There is no doubt that Grant's army wanted a good deal of re-organisation on the 7th, but when they did come into action the results were decisive. Beauregard profited by this inaction of Sherman to reinforce his right; but when, about one o'clock, Grant's army being thoroughly in movement on the Federal right and Buell on the left, there was no help for it—the moment had arrived for a precipitate retreat.

About one o'clock a message arrived from General Bragg that unless he were reinforced at once, he would certainly be overpowered. A final effort was made by Bragg, but it was no use, and at 2.30 Beauregard gave him orders to retire slowly. Beauregard now knew that his 30,000 men were facing at least 20,000 fresh troops of Buell, 5,000 fresh troops of Lew Wallace, together with the whole of what was left of General Grant's fighting army of the day before. There was no means of avoiding the issue, and Beauregard's decision was to fight tooth and nail, so as to deceive the enemy, and to effect at the same time an orderly, safe, and honourable retreat. He had not yet been driven back beyond the Shiloh Meeting House (to which I have so often referred), and it was here, as on the preceding day, the General in Command—Grant this time—personally led a charge which finally broke up the Confederates, and converted into a retreat what might have been made a helpless rout. From this moment, as Wallace says, "Step by step, from tree to tree, from position to position, the rebel lines went back, never stopping again. Infantry, horses, artillery—all went back. The enemy were fighting with obstinacy, but retiring everywhere. Cheer after cheer rang through the woods; every man felt that the day was ours."

Beauregard then turned to Breckenridge, who had command of the rear, and gave him orders to prevent the retreat being turned into a rout. The position was unfavourable for rapid pursuit. Buell's men were thoroughly worn out by the terrible march from Columbia to Savannah before described. They had endured a terrific storm on the night of the 6th, and they had fought desperately on the 7th. The elements again broke loose in their anger, and the country was in a shocking state. Again every attempt at an advance by light troops was checked by the rear guard under Breckenridge, who had orders to fight to the death.

It may be asked, What were the cavalry doing? I would ask permission at some future date to refer to the action of cavalry during the Civil War in a paper by itself. Suffice it at present to say that cavalry, as such, in this case and in this country, were of little use.



There is one point I might refer to here with great satisfaction, and that is to the extraordinary success of the Quartermaster's Department, the Medical Department, the Sanitary Commission, and the public at large of the North, in coming up after these battles to give effective aid to the sick and wounded. This aspect of the war demands separate attention.

The storm that night included blinding hail for about three hours, showing clearly that it was useless to pursue. Sherman was ordered to pursue with two brigades—to follow in the tracks of the enemy. Being attacked by Forrest's cavalry, however, he easily repulsed it, but then learned that Beauregard had retreated to Corinth; whilst the dead left on the roadsides unburied, the farmhouses filled with wounded, abandoned waggons, ammunition, tents, etc., told their own tale. The battle of Shiloh was over.

It is probable that about no other battle fought during the four years' war were such extraordinary stories told as about this particular fight. It was, as a matter of fact, the first real big and heavily contested battle of the war, and the first in which both Confederates and Northerners had fought to the death; the Confederates ultimately being overpowered, as much by superior numbers as by hard fighting, after having on the first day secured what they justly considered a victory.

The lessons to be drawn from the battle of Shiloh are simple in their nature. In the first place, there can be no manner of question that Grant was surprised, in the ordinary sense of the word. But it must be remembered that he had been superseded; that he had only been in command again about a fortnight; that Sherman had been sent on ahead by General C. F. Smith, who was then in command; that General C. F. Smith and Sherman had fixed on the plateau and Pittsburg Landing; and that Grant knew that General Buell's force was joining him. His efforts were therefore directed towards waiting in a strong position, where he could hold on, until Buell joined him, and could then move on the Memphis and Charleston Railway by himself. Again, he had secured absolutely no information. He believed the enemy were in Corinth. Both sides speaking the same language, it might have been supposed that Sherman and Grant might between them have obtained one solitary rider who could have told them that on the night of the 5th April 40,000 men of the Confederate Army lay within a stone's throw of their pickets. But such was not the case. There was again a failure to entrench. Grant considered that his soldiers wanted drill more than digging. Events proved that they wanted both. He did not make this mistake after Shiloh.

Thirdly, the Commanding General of the South was killed in the first day's fight, and for nearly an hour no one was able to convey this news to his next in rank, thus causing a temporary paralysis.

Fourthly, the expenditure of ammunition was enormous, as always must be the case with untrained troops. Grant's foresight early in the day prevented the catastrophe which must have resulted to the Federals from a failure of cartridges—a misfortune which did happen to the Confederates, especially to Jackson's brigade, at the end of the 6th April.

If Grant believed that Beauregard was at Corinth, Beauregard on his part undoubtedly believed that Buell was marching on Florence instead of on Savannah. Forrest, the well-known cavalry leader, found out at night, on the 6th, by pushing close up to the Federal lines, that bodies of troops were coming over the Tennessee during the night, and he endeavoured to find Beauregard to tell him this, but Beauregard could not be found—another fatal error in military tactics. A general, it is laid down, should always be accessible, and his station known to everybody. Forrest got hold of one or two corps commanders, and conveyed to them his opinion that an immediate attack to finish up the Federals was necessary that evening, or that the Confederates should retire as quickly as possible next morning.

Next, as to the distribution of orders in the field, I have myself seen plenty of mistakes in times of peace caused by verbal orders being given instead of written ones. A verbal order may sometimes be unavoidable; but an order transmitted verbally by an A.G., with ample time and the orderly staff at hand, caused a mistake which placed General Polk in front of Hardee and Bragg on the 4th and 5th April, and appears unpardonable. It was this that caused Beauregard to lose that day which, if he had had it in hand, might have destroyed Grant before Buell had come up. I say *might*, because Grant was confident to the last; and there is no doubt that the Confederates had been so severely mauled that they were in no condition to advance on the night of the 6th. Further, General Lew Wallace's fresh 5,000 men, coming up on the right of Sherman, with the gun-boats on the left, might have held the small semicircle round Pittsburg Landing for another day.

In conclusion I have to remark—and I am not the first person who has done so—the extraordinary diversity of the statements to be found in the books of different writers on most military matters, especially as to this battle, as to hours, dates, names, and places. I can only thank my audience and the Council of this Institution for having permitted me to bring before you the result of my labours to disentangle the somewhat ravelled web which surrounded, and may still surround, the battle of Shiloh; and I would further beg my Volunteer brethren to take to heart the lesson of this and many another sanguinary battle fought in the Civil War, and that is that, although generals may know their work and know what they want to do, and though men may be brave, unless the chain of successively responsible officers be kept intact and in full efficiency, confusion and disaster are bound to result.

Beauregard most pitifully complains in his Memoirs of his unsuccessful appeals to Richmond for efficient officers capable of acting as colonels, and also for engineers, to which appeals a deaf ear was turned. But the conduct of the War Office at Richmond was consistently foolish, not merely in this matter but in almost everything else, and nothing but the splendid individual heroism of the Southern men prevented the war being finished in half the time.

But it must never be forgotten that they were all of the same breed. All had the same average pluck; and in the lessons of the Civil War in

America will be found more valuable instruction to Englishmen than in any campaign wherein men of different races contended, because, as in a game of chess, if the morale on both sides is equal, it can only be tactical or strategical errors that win or lose battles. There is no question of one side being better than the other. In such a war, as in chess, the better tactician, whether by initiative skill on his own part or power to profit by the errors of his adversary, is bound to win; whilst his enemy, though beaten, is not disgraced.

The CHAIRMAN (Lieut.-General E. H. Clive):—The lecture to which we have just listened has been clearly and dramatically told. There may, however, be some questions which the audience might like to ask. For instance, I should like to know how Buell crossed the river—was it by gun-boats?

Colonel TULLY:—They had small boats as transports; they were at Crump's Landing, lower down the river, and they were brought up for this purpose.

The CHAIRMAN:—I will close with a few remarks. I think Colonel Tully has brought before us very clearly the peculiar circumstances and conditions under which these early American battles were fought. Both men and officers were only partly trained, yet they developed an enormous fighting power on both sides. The Governments of North and South enlisted an immense number of men, and hurried them up to the front, and in the end, in my opinion, the best man won. On this side of the Atlantic we have been so used to wars that most people understand the rules of warfare and its necessities. In America it has been otherwise. In that country there had, for nearly a hundred years, been no enemy—the precautions which every nation with hostile frontiers is bound to take for the purpose of safeguarding itself had in the United States been unnecessary, and were consequently neglected. The Army was only wanted to keep the Indians on the West in order, and the Navy was wanted only to secure the commerce. Consequently when war broke out on a different issue both sides alike were unprepared. And we see the effects. Colonel Tully has shown us some of the difficulties which attended the operation of fighting when the people of a country do not understand what war is, and that every loyal subject may have to fight for his country. I remember hearing of an incident of the American War which could not have happened here or in any European country. I am not prepared to give you the name of the battle or the date of it, but I recite it as it was told to me. The Confederate Army lay concealed on a line of heights looking north above a valley. On this side the hills falling into the valley were thickly timbered, with wide glades through the forest. The Northern Army was advancing, and entered these woods ignorant of the proximity of the Southern forces. Without cavalry screen or advanced guard the Northern Division advanced, and when well in view from the Confederate heights the guns opened a serious fire, which did much execution. The infantry closed into the woods and lay safe. The firing being heard in rear, cavalry was sent to the front, and came gaily down the wide glades in their bravery. A young officer went to his colonel and said—"Hadn't I better ride back and warn these fellows not to come down? They will get a slating just such as we have had." "Sit down," was the reply, "we have had our turn; let them come and take theirs." The cavalry division came down and suffered considerably. This kind of devil-may-care feeling, though most important in soldiers, seems, nevertheless, to be sometimes misapplied. I will now ask you to thank Colonel Tully for his lecture. Let me repeat that it is of the utmost importance that everybody should know that he may have to fight for his country. We have made a great advance in that respect ever since the Volunteer movement began. Colonel Tully is an example of an officer joining the Volunteer Force and serving a long time—not only devoting himself to his station with his Volunteers, but

studying these military questions. We are much obliged to him for the researches he has made in these things, and putting them before us so clearly. I beg to propose a vote of thanks to the lecturer.

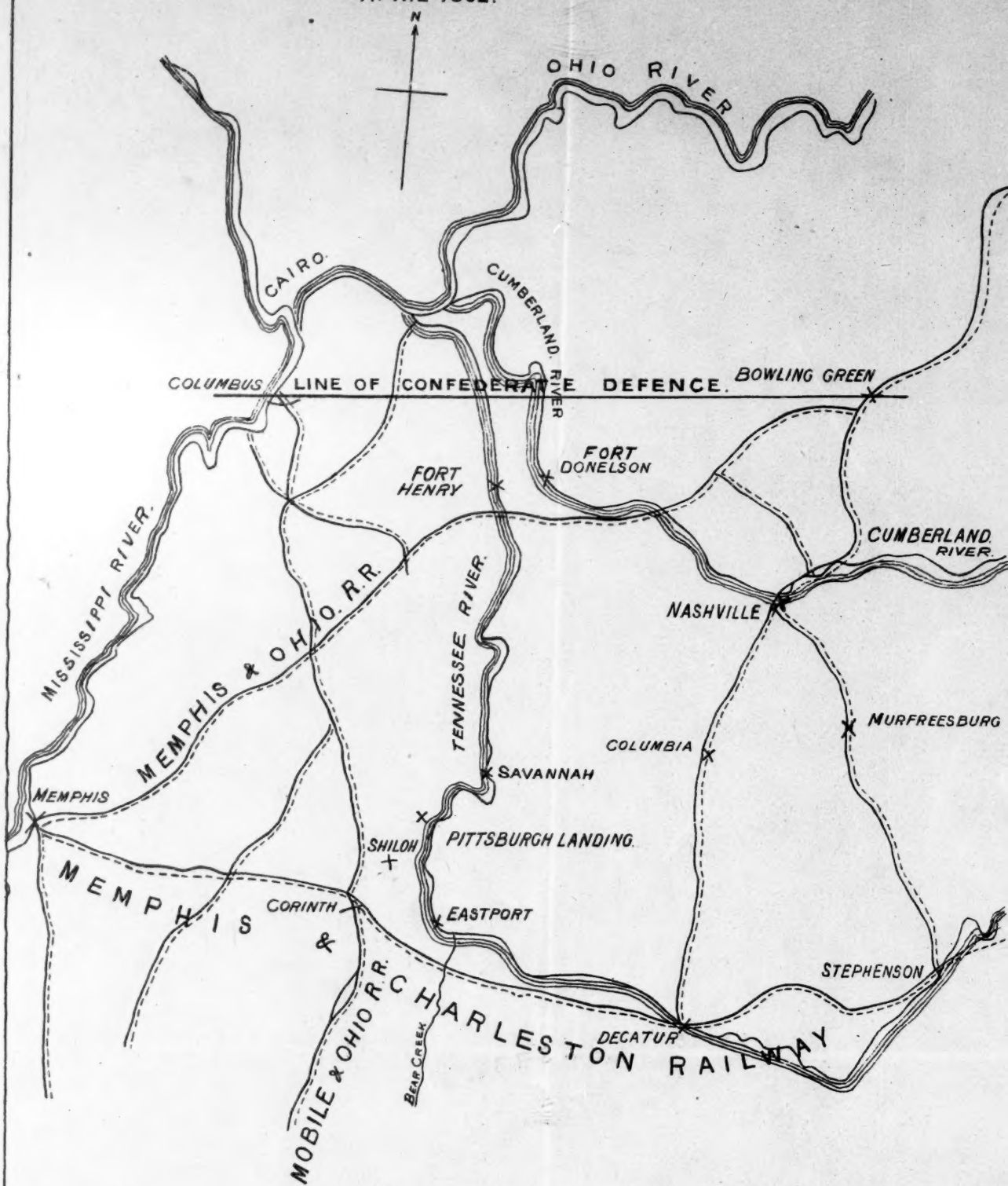
Major BYRNE :—I have much pleasure in seconding the motion. We have had a most interesting lecture—one that has required great research into many minute details, and I am sure we are greatly indebted to Colonel Tully.

Colonel TULLY :—I may perhaps be allowed to mention that Major Byrne commanded a company during the final stages of the War on the Potomac. He was present at the capture of Lee's army at Appomattox, and he knows as much about the actual fighting of war as most people.





THEATRE OF WAR.  
APRIL 1862.

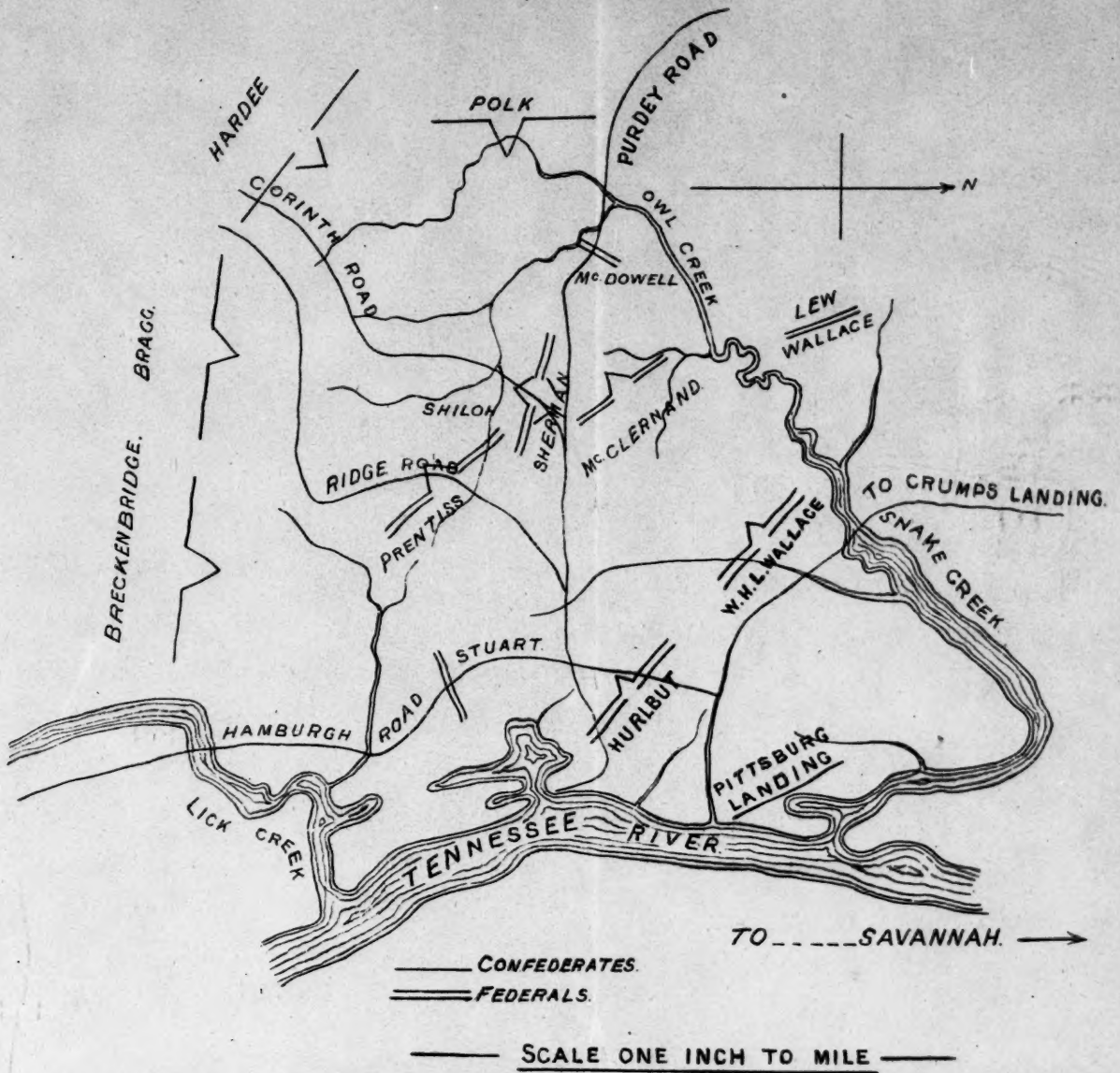


B.  
SHILOH,  
NIGHT, APRIL 6<sup>th</sup> 1862.

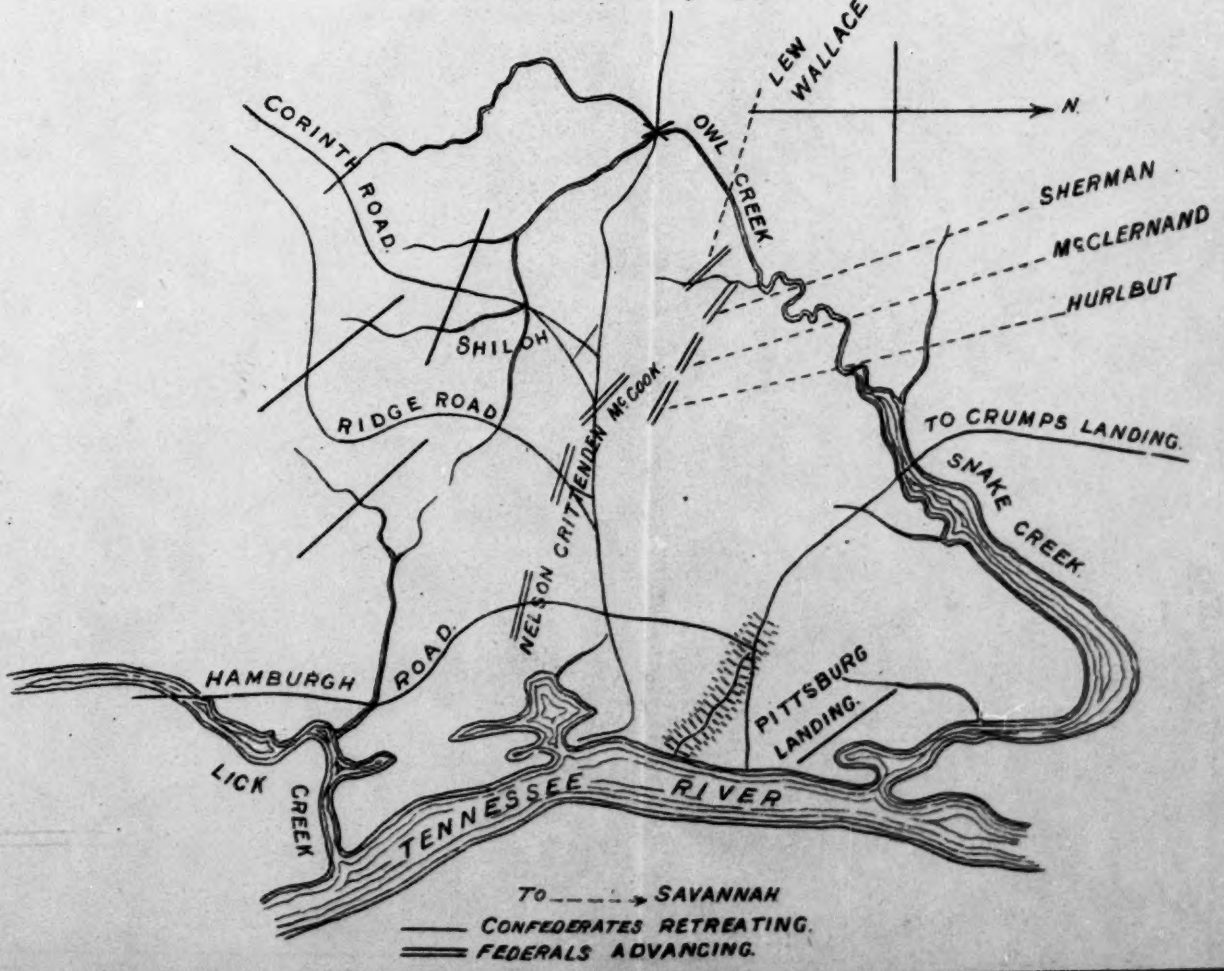




A.  
SHILOH,  
MORNING, APRIL 6<sup>th</sup> 1862.



C.  
SHILOH,  
MORNING, APRIL 7<sup>th</sup> 1862.





## DISCUSSION ON THE MILITARY PRIZE ESSAYS, 1897.

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### SUBJECT OF ESSAYS:

"The Relative Advantages and Disadvantages of Voluntary  
"and Compulsory Service, both from a Military and a  
"National Point of View."

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### ESSAYS FOR DISCUSSION:

*First Prize Essay by Captain G. F. ELLISON, p.s.c., The Queen's  
(Royal West Surrey Regiment).*

(April Number of JOURNAL.)

*Second Prize Essay by Captain D. HENDERSON, Argyll and Sutherland  
Highlanders.*

(May Number of JOURNAL.)

*Essay (honourably mentioned) by Major C. E. D. TELFER-SMOLLETT,  
3rd Bn. The South Staffordshire Regiment.*

(August Number of JOURNAL.)

*Essay (honourably mentioned) by Captain W. P. BLOOD, p.s.c., Royal  
Irish Fusiliers, D.A.A.G. Punjab.*

(September Number of JOURNAL.)

*Essay (honourably mentioned) by Captain L. E. KIGGELL, p.s.c., Royal  
Warwickshire Regiment, Instructor in Tactics, etc., Royal Military  
College, Sandhurst.*

(October Number of JOURNAL.)

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Wednesday, November 17th, 1897.

Field-Marshal The Rt. Hon. Viscount WOLSELEY, K.P., G.C.B., G.C.M.G.,  
Commander-in-Chief, in the Chair.

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The CHAIRMAN:—Gentlemen, the subject of the Essay for the Gold Medal Prize this year, as you all know, was "The Relative Advantages of Voluntary and Compulsory Service, both from a Military and a National Point of View." Of course, I need scarcely say that the subject is a very interesting one, and a very important one at the present moment. I have now to invite a discussion upon it; but before doing so I might, perhaps, say that there was a large number—twenty-six—of competitors for this prize. I do not pretend to say that I have read the twenty-six essays, but I have read some of them, and I know something

about the others. And I can say, without any dread of being contradicted, that they all display a considerable amount of talent and ability, and show how much the men who wrote them had thought upon this subject. They also display a considerable knowledge of military history. Five of the essays were marked by the judges as deserving of special commendation, one of those five, of course, being that of the successful competitor, Captain Ellison. There is a point connected with these five essays deserving of notice. I mean that one was written by an officer belonging to the Militia, and the other four by men who had graduated at the Staff College. The fact of one of these five men who are honourably mentioned being a Militia officer is to me a satisfactory indication that the Militia officers of the country are not behind, or certainly are anxious not to be behind, their brothers in the Regular Service in the study of the great profession to which we all belong, or have belonged. At the same time I am sure it will be gratifying to all who attach considerable importance to military education learn to that the other four are all graduates of the Staff College. I think this fact will impress those officers of the Army who have never turned their attention to the advisability of entering the Staff College. It will lead them to realise the great benefit, not only as a matter of military efficiency, but also as affecting their future career, which a Staff College education would confer upon them. I have now, gentlemen, to invite a discussion upon the subject dealt with in these essays, one which, as I have already said, is of very great importance at this particular moment.

Major-General J. F. MAURICE, C.B., R.A., *p.s.c.* (Commanding the Woolwich District):—My Lords and Gentlemen, I had not intended to speak, but, as nobody else is disposed to start, I shall be most happy to say a few words just to kick off the ball. We all are very grateful to Captain Ellison for having produced the extremely interesting historical paper that he has given us, and if I do not enlarge upon its merits it is only because I trust that everybody who has not read it will read it for themselves. Therefore I shall limit myself to points in which it seems to me that his very valuable paper somewhat misses what is for us the most interesting aspect of the subject. I admit that all the essayists appear to have taken, and I think rightly taken, the subject given them as a general one; but just at this particular time, when the question of compulsory service for the Militia has been almost brought within the region of practical politics by the speech of the Solicitor-General to his constituents, it would have been useful if it had been treated more specifically than it has been in the essay with reference to England herself. At all events, I think that the hope of having that question dealt with has brought together this great gathering. Now I cannot persuade myself that, great as is the value which I attach to the historical study which Captain Ellison has given us of the conditions of service in Rome and Carthage, and to the whole past history of the relations of Powers to one another, the case of Rome and Carthage, or any of those other States which he has mentioned, precisely applies to the necessities of England at the present time. Though it is true that Rome and Carthage were separated by a sea, the fact that they were on two different continents practically implied what, in fact, took place—that Hannibal was able to act against Rome itself by land, and that Rome, being able to land whenever she pleased on the continent of Africa, could act against Carthage itself by land. For us no similar facts exist. For us the question of compulsory or voluntary service, or of anything else, turns upon this, that we are an island State which has extended its dominions beyond the seas throughout all parts of the world. Therefore, whatsoever we decide about compulsory or voluntary service must be based upon the consideration that we want an Army which is to act with the support of an invincible Navy. It is of no use to base our Army—no matter how great it is—on the principle of a Militia for the defence of home, because we do not intend, if we can possibly help it, anybody to land on these shores at all. I have long since maintained—and have been



pitched into handsomely by some of my ultra-naval friends for maintaining it—that we ought not to sleep within these islands, abandoning all sense of national duty on shore, because we have a Navy outside on which we depend for the most perfect assistance that they can give us, and that the changes and chances of naval warfare are such that we ought to be ready to relieve the Navy from the necessity of hanging round these shores in a purely defensive attitude. That I believe most fully, but I cannot believe that we can discuss the question whether the most suitable form of service for us is a compulsory Militia or universal Militia, or, on the other hand, an Army able at short notice to go anywhere and do anything, without assuming, as I am sure every soldier would sacrifice anything to insure, that we have a supreme Navy. Now I think, excellent as Captain Ellison's essay is, that it hardly adequately takes account of that essential condition. The note which he has struck as to the value from a national and military point of view of the discovery of the philanthropists that the best training they can give to the young hobbledoys of the street is a military training, and of the fact that they have been forced to take up that as an essential condition of the civilisation of the country, is of the greatest importance. He tells us that there are now 70,000 boys being trained under military conditions. Some of them, as I know, are being very effectually trained. Certainly the fact that philanthropic men and ladies have found that the most effective training they could procure for the *gamins* is a military training is one of which we soldiers may be proud. But when the question is whether by some means we are to enforce military service, then the first point for us is the effect which that is likely to have upon the Army that is available for the defence of the whole Empire, and not that of this little island alone. I recognise that the time may come—perhaps it has come; it is a question I am not disposed to discuss—when pressure might be put upon counties where they have not supplied their proper quota by voluntary service to supply it by some method of ballot. I know that there is a large number of Volunteer officers who look to that as a most valuable indirect agency in rendering efficient the Volunteer forces. Anything that tends to render efficient the Volunteer forces—as they think this would tend to do if they were able to give exemption to people from going into a compulsory Militia by the offer of volunteering—would be to us of the highest possible value. But I do think that the first consideration is that, while we have half of our Army always serving abroad—and we always, as long as we maintain our Empire, must have a very large proportion abroad—no nation on this earth has yet ventured to adopt a system of compulsory service for expatriation. The essential condition of effective military service for us is that we shall be able to keep up our great Army in India, and in the coaling and those other colonial stations abroad which leave our Navy free to act, because they give us footholds in the world here, there, and everywhere, where our Navy can coal and be docked; and, secondly, to be able to maintain and reinforce in all the many parts of Africa, America, and elsewhere the troops which hold the territory which we owe primarily to our supreme forces on the sea. I cannot think that for those peculiar circumstances of our island-state it is very useful to bring in the conditions which are applicable to the relations of such countries as Germany and France towards one another, where the one fixed part is that they have to fight either for aggression or for defence on a land frontier immediately adjacent to their own country, and where all their methods of recruitment are determined by the necessity of producing the very largest Army they can for a war at home with a neighbouring Power on their immediate frontiers. I think, gentlemen, that will be sufficient to kick off the ball for future tussles, and therefore I shall not occupy any more of your time.

Colonel H. B. PATTON, C.B. (Commanding the Severn Volunteer Brigade):—My Lord, there is one thing I am very much delighted at—that the country has made up its mind, or it is rapidly making up its mind, that our Army should be increased. Furthermore, I think it is rapidly coming to the



humour to pay for it. We have had great attention paid to our Navy, and it is a matter of consolation to us who think the subject over that probably we are likely to have an efficient and a strong Army as well. Of course the great military problem to solve is to have an Army which fully meets the needs of our Empire and, at the same time, is placed on the most economical footing, and I think we owe a great deal of praise to the distinguished officers, as the Commander-in-Chief has said, who have written the brilliant essays for our consideration this afternoon. As I may only take up your time for a very few moments, I will venture to say that it strikes me as an old soldier, who entered the Service in 1852, that the solution of this difficult problem is to divide our Army into two classes—one an Army composed entirely of Regular soldiers, the other an Army for home defence, consisting of Militia, Yeomanry, and Volunteers, with Royal Artillery and Royal Engineers of sufficient complement to enable them at all times to act with efficiency in the field. A Regular Army is to be obtained by fairly and squarely entering into the labour market so as to get the very best men that can be obtained in this country, and there are thousands of them. The home Army must be worked up, in my opinion, to a much higher state of efficiency than it is at the present moment. I would therefore strongly advise my countrymen to accept the ballot for the Militia, because in that case there are thousands of officers and men who would offer their services to us in the Volunteers, and when we had got them we should be enabled to put pressure upon them to make themselves efficient, and to do that amount of duty which should secure the safety of the country. With regard to what I have said, I will quote Captain Ellison, who has distinguished himself by winning the Gold Medal. He says:—"Are we convinced that we are not, as with the Romans, imposing on our Regular forces the double duty of home defence and of imperial protection, and by so doing are expecting more of them than in time of danger they would be able to perform? The endeavour to throw the burden of both home defence and imperial protection on its permanent forces must end in military inefficiency and confusion; for those forces will have to be increased to such an extent that their quality must suffer, and when it comes to a great war one of the two duties entrusted to them will almost certainly be neglected, or, in other words, home defence will be guaranteed at the expense of imperial interests." Captain Henderson, who won the second prize, says on that subject:—"The system of service which has been adopted by Holland is based on a principle which is often recommended for our own country. Holland has two Armies—one for home defence and one for colonial service. The Colonial Army is voluntary; the Home Army is partly voluntary and partly compulsory—that is, the ballot is used to complete the establishment when voluntary recruits are not forthcoming in sufficient numbers." Now that is the very organisation which strikes me as the most suitable to this country. We have, and are obliged to maintain, 70,000 of our Regular troops in India, and it is to my mind quite a question whether (judging from what I saw of the long-service troops in India, for I had the honour of serving in the Bengal Horse Artillery for a couple of years) it would be very much amiss to go back, in that portion of the Regular Army which is quartered in India, to the old long-service system with pension.<sup>1</sup> There is one more point I would mention with regard to that Army. Things have so changed since the days when I was quartered in India that, now there are railways and rapid means of communication from one end of the country to another, it strikes me as altogether needless that so many of our battalions should remain during the hot weather in the plains. I think more of our regiments should be stationed in healthy climates, where regulations could be enforced entirely keeping the men, if I may say so, in hand, and also, during the hot weather months, when men become demoralised by heat and want of occupation, they might be trained in mountain warfare, and in the cold weather be moved

<sup>1</sup> I intended to add: or a longer service system than at present with pensions in proportion to length of service.—H. B. P.

into the plains and used in large camps of exercise. In that way, I may say, from one year's end to another, the Army of India would be in training, and I do not think it would deteriorate under the circumstances. By the late re-organisation of our Army we now boast of 80,000 Reserve soldiers, and to lose one of those men I consider would be a great blot on any future organisation in this country. In order to avoid this, I would venture to suggest the remainder of the Army should be enlisted for shorter colour service. The consequence would be that the wastage of the Reserve by the longer service in India would be made up by men being passed more rapidly into the Reserve, and in this case it would be far easier for men to again obtain employment in rural districts. That, I think, in itself is an enormous advantage, and should be considered. Finally, the Reserve should be had up annually for training. I do not believe in rusty soldiers; I believe in soldiers being kept up to the mark as you keep your fire-arms. Keep your powder dry; and then happen what may, we shall have an Army fit to take the field with the credit and brilliancy it has shown in past ages. With regard to the home Army, the Militia, the Yeomanry, and the Volunteers, I would keep it up to its strength, as I have said, by the Militia Ballot. There is no hardship in a man having to serve his country. There are thousands of splendid young fellows that pass their time in lawn tennis, cricket, etc.—the games we are justly proud of—but I think the reason they do not serve is because they pooh-pooh the idea of their services ever being required. Major Telfer-Smollett says on this subject:—"It is the duty of every citizen to fight for his country; and if his services are to be of the slightest value in war he must be trained, whether he likes it or not, in time of peace." As to our Auxiliary forces at the present day, the Militia are considerably under their strength. There are some 18,000 Militiamen required. We all know that the Yeomanry is considerably under its strength—at least one-third; and the Volunteers, to which I belong, I believe at the present moment are 25,000 or 30,000 under strength. All this would change like a dream the moment the Militia Ballot Act was enforced. We should have our home Army quite full, costing but little money, and we should be able to work it. Captain Henderson says:—"The most plausible argument which can be advanced against the introduction of compulsory service in the United Kingdom is that the British Navy presents an impassable barrier to foreign aggression, and hence that a powerful home Army is unnecessary." This argument cannot be better replied to than by quoting the following remarks of the present Commander-in-Chief—remarks, be it remembered, which practically form the opinions of the Duke of Wellington and other illustrious generals. Referring to the defeat of our fleet off Beachy Head by the French in 1690, Lord Wolseley says, in his "Life of the Duke of Marlborough":—"The story of these events deserves to be well considered, since it is a common article of belief, and one that is held by some able men, that England can have nothing to dread, so long as she has a strong fleet between her and France. Some even go as far as to denounce all expenditure upon a home Army as a wicked waste of public money. It is well to remind such that sea, wind, and weather are uncertain elements, upon which wise men may well hesitate to base calculations involving the safety of an empire. The accidents to which, in the nature of things, a fleet must always be exposed, are so many and so appalling, and they are now greater than ever, that no master of the great theory of war . . . would dream of committing the safety of a great European State solely to its Navy." I venture to add one statement to that which I have read to you, and that is, that the people of this country, who think it is the mission of our fleet to patrol our Channel and to keep us from the fear that we shall be invaded, are wrong. The mission of our fleet is to assemble and to attack our enemies whenever they can be found, to guard the food supply coming into the country, so that the nation, ready to fight, can protect itself against all invaders. As regards the organisation of the home Army, I will not take up any more of your time, on which I have considerably

trespassed already, but I will thank you for the very great kindness and courtesy with which you have listened to the few remarks I have ventured to address to you.

Colonel J. A. FERGUSSON, *p.s.c.* (Professor of Tactics, etc., Royal Military College, Sandhurst):—I want just in one word first of all to refer to what has been said by previous speakers. General Maurice has spoken of our country as an island State; but is it not worth while remembering that our frontiers are now continuous in three continents with other States, and that our duties are world-wide? We could not leave our Colonies in the lurch if they were attacked. For instance, which God forbid, supposing the United States were to attack Canada, would not that be our quarrel? Russia and France are continuous with us in Asia; and in Africa, too, we touch other States. Therefore, it seems to me that when the essay of Captain Ellison is criticised because he seems to forget that ours is an island State, we ought to bear these facts in mind. General Maurice said something about the training of boys, and before I go further I should like to say how enormously important that seems to me to be. If we could only man our Army with boys who have been trained as our Bluejackets are largely trained, if we could get hold of them at fourteen and fifteen (and get hold of even the humblest of the population at that age), we could make men of them, and very valuable soldiers they would make. Many of them would make splendid non-commissioned officers later on. As regards what Colonel Patton said, I am afraid he is too sanguine when he says the country is becoming educated up to the necessary point. I am afraid we have first of all to convince the Cabinet, and I do not think the Chancellor of the Exchequer spoke the other day like a man who was convinced that the Army was far below its necessary requirements. Two things strike one in studying these essays. One is their remarkable ability. Captain Ellison's essay is evidently that of a clever man. It shows enormous research, but I am not quite sure it is practical enough. Perhaps he speaks with the reserve of a Horse Guards' official, and did not like to tell us his own view. The same applies to Captain Henderson. His essay is also of the greatest literary merit, but I defy anyone to find out what he thinks. The other three essays are of much more practical value—Captain Blood's, Captain Kiggell's, and Major Telfer-Smollett's. Captain Kiggell's essay ought to be made a State paper, and every Cabinet Minister ought to have to pass an examination on it. Major Telfer-Smollett's essay is also deeply interesting. It is a splendid summary of the systems of Germany, France, and Switzerland. It gives most valuable information from a man who knows what he is talking about, with regard to the real state of the Volunteer Force. Another thing that strikes one in reading these essays is that nobody pretends that the Army is in a satisfactory state. We soldiers all know it is not; but we have got a good deal to do before we convince the country of its actual danger from the weakness of the Army. I say nothing against the soldiers we have got, but I say the Army is terribly weak and terribly insufficient for the work it has to do. We have to convince the nation of that, and it is the duty of everybody who has studied the question to use his influence, and do all he can to persuade first of all Members of Parliament, the Government, and so on, that that is the case, and through them the country; because nobody listens to what we say here. We are not reported. But if a Cabinet Minister speaks, he speaks with authority, and we have to convince people of that sort of the real truth of what we say. It makes one sick when one reads again and again that compulsory service is alien to the spirit of the nation. If it is, it is because the nation has not been properly instructed by ourselves. Alien to the spirit of the nation! Compulsory vaccination is alien to the spirit of the nation; but if you convince people—which is rather a hard thing to do—that if they do not vaccinate their children they get small-pox, then they give in to it. We are not children. The time has passed for us to spit out a dose of medicine because we do not like the taste of it. If we

are convinced that medicine will do us good, and the doctor orders it, we swallow it with a wry face. And that is what the country will have to do, not with compulsory service, but with "universal service." Universal service is what we want. If Japan can submit to universal service, and every man between seventeen and forty has to serve; if Switzerland puts up with universal service,—are we less patriotic than the Japanese or the Swiss? I am sure the Scotch are not; I am sure the Irish are not. In Switzerland, every man from twenty years of age is liable to serve. Why should we be behind them in that matter? It is a filial duty to serve the country; it is a duty everyone owes to the mother country to render service in her defence all over the world. We cannot speak with weight in the councils of Europe because our Army is so weak, and every other nation knows it. Even if the national conscience is greatly stirred, and we feel it is the national duty to interfere to put down atrocities wherever they may occur—I do not say it is our duty, but the nation feels it to be a duty—we cannot interfere with any weight, because they know that our Army is weak. If we carry any weight in the councils of Europe it is because our Navy is strong, and not because our Army is strong. Why should not they both be strong? Why should not the Army be made fit for the work it has to do? We all admit the mischief; what about the remedy? May I very humbly offer my contribution to the suggestions which will be made this afternoon? In the first place, having considered the question for years, I am convinced that it will not do to have two Armies. We cannot have universal service for the Army, because we cannot have universal service extending over a long term of years. What is the use of two or three years' universal service to us when we have got our Indian Empire and our great Colonies to consider? The difficulties and objections are too long to state this afternoon, but the objections to having two Armies seem insurmountable. Then I am afraid one is obliged to discard universal service for the Army altogether. One always is a little afraid to speak on these questions, because the public imagine that if soldiers talk about an increase in the Forces they expect to "suck some small advantage" from it; but it becomes a public duty for us to speak out in this matter. This is what I think we ought to do. First of all, improve our Army in certain particulars. It is for the authorities, not for humble people like myself, to say how much the Army ought to be increased; but some increase in the Army as it stands is necessary. But how are we going to get the recruits? This year we shall require an exceptionally large number of recruits because of the great wastage in India; and if we also increase our Army considerably, the recruiting problem will be very difficult. Therefore we must make some changes towards improving recruiting. In the first place, I should sweep deferred pay away. It costs half a million a year, and it is worse than wasted.\* Deferred pay has been a most mischievous thing in many ways, too long to state this afternoon; it tempts men to go away just when they are at their best. I have known numbers of cases—I do not say I could prove it against the men—but I have known men in the old days who have bought their discharge with their deferred pay. It is illegal, of course; but how are you to find out what men do with their deferred pay when they have got it? Then the bad soldier gets it as well as the good. A man may be a constant thorn in the side of his commanding officer; he may be constantly in cells for short periods, and be continually a defaulter, and yet he goes away with nearly as much deferred pay in his pocket as the best soldier in the regiment. The system is bad, and it also shows great ignorance of human nature. I know the Secretary of State who introduced it, although I do not know who his advisers were. Men do not enlist because they are going to get £21 seven years hence:<sup>1</sup> they think

<sup>1</sup> Time prevented me from pointing out the hardship of the rule that a Reservist cannot rejoin the Service without refunding his deferred pay, even though he may be in great want. Let all men of good character re-enlist from the Reserve within two years of transfer, and you will get a large number of valuable recruits at less cost, because you save their pay in the Reserve.—J. A. F.



of what they are going to get immediately. Instead of this deferred pay, give them free messing, and that at once will make an enormous difference in popularising the Army and making it complete. Then, again, I respectfully say that we have sacrificed our Army too much to the Reserve, and the Reserve has not quite turned out the real thing it was hoped it would be. I speak with great respect of the 78,000 men which we have on paper, but they cannot help deteriorating in civil life. A man may be employed as a potman in a public-house—can you tell me that after four or five years in that position he is likely to be able to march? The Reserve will not be able at first to give us efficient soldiers for marching, speaking generally; and they will not be very amenable to discipline. A regiment composed of very young soldiers made up to strength by deferred men in equal numbers will be a very difficult team to drive. A bird in the hand is worth two in the bush, and I say that a soldier is worth more than two Reservists any day. Therefore I make these two humble suggestions—I recognise that to some extent you may injure the Reserve—I say increase the pay of men when they extend their service with the colours, especially non-commissioned officers. An employer of labour does not allow a good man to go away; he knows his value, and takes care to keep him. But we, whenever we have to administer the affairs of the country, lose our common sense. If you have got a good soldier, take care to keep him, and make it worth his while to stay; and if you have a good non-commissioned officer, encourage him to re-engage, and increase his pay again. A man is not past his best at fourteen years' service, and a good non-commissioned officer is a good man fully up to twenty-one years. I am a firm believer in enforcing the old Act of the Ballot for the Militia, possibly with modifications. It is not a very onerous law. Every man has to render service to the country in the Militia between the ages of eighteen and thirty, that is all, and he is not allowed to purchase a substitute. It would be no great hardship. Lord Wemyss wrote a very able letter in the *Times* the other day, in which he seemed to advocate one year's service for the Militia; but, supposing you increase the Militia to the necessary extent—I believe we should have to increase it to five times its number—how are you going to find barracks for all those men for the year? No, you must have the usual annual training. I would increase the ordinary Militia by five times its number by means of the ballot, and then these advantages would come:—1. You would find plenty of recruits for the Army through this Militia. It is not compulsory—it is universal service rendered through a sense of filial duty. You will get plenty of recruits for the Army from the Militia. 2. You will greatly improve the manhood of the country. 3. You will be able at any time to release the Army for service abroad, because you have a splendid force in reserve for home defence.<sup>1</sup>

Commander REGINALD G. O. TUPPER, R.N. (Naval Intelligence Department, Admiralty):—Colonel Fergusson alluded to our danger on the American frontier from the United States. I take the liberty of calling to your notice, in case you should not have seen it, an article in which an American military officer gives his opinion of the situation. The article appeared in the *New York Army and Navy Journal* of the 13th March. It is entitled "Why we should favour arbitration," and discussed the Arbitration Treaty—then before Congress. The writer, who signs himself "An Infantryman," states that they have got a Regular Army of only 20,000 men, poorly equipped and badly armed. Added to this, they have a State Militia in the various States of 118,000 men, badly armed and badly equipped. He says that neither of these forces is of any value compared with the German or British Army. He then goes on to point out that with steam communication conditions have changed very materially, and he states that in six days he believes British soldiers might be landed on the shores of the Lakes. I think

<sup>1</sup> And to recruit your Armies abroad. In the Peninsular War the Militia sent 100,000 recruits to the Army, and in 1812 it numbered 240,000 men.—J. A. F.



he is rather wrong there, but I really think that in about three weeks we ought to be able to land two or three army corps in Canada on an emergency, which would be ably seconded by the Canadian Militia. The article shows that the American Army officers are alive to their unpreparedness and to the possibility of our putting a large armed force suddenly on their frontiers. The writer states that in such a case there would be practically no resistance, that the Militia and their Regular Army could not stand against a regularly-trained, well-equipped, Volunteer Army of highly-trained soldiers such as ours is; he, therefore, points out that a year of arbitration is absolutely necessary for them to train and prepare a force capable of offering effectual resistance. As to what Colonel Fergusson said with regard to the re-engage pay, it may not be generally known that we have re-engage pay in the Navy. Many men in the Navy think they would sooner drive a donkey-cart than perform their ordinary duties on board a man-of-war. So when they complete their first period of service they go ashore. They know that they get 2d. a day extra pay and all their former ranks, badges, etc., if they come back to the Service; and very often they find that they *do not* pipe to dinner on shore and remember that they *do* pipe to dinner on board ship. So they re-engage and are glad to get back, and can do so, having no deferred pay to refund. As to the training of all boys, that seems one of the solutions of the problem before us. It takes very little, as most people know, to give a boy a considerable military training. If you take the military training that midshipmen get on board a man-of-war, it is not very much. They get half-an-hour's drill a day for five days a week in the morning, one afternoon in the week is given to gunnery, and one forenoon to battalion drill. Well, with only that extending over three years, I venture to say that an average midshipman is quite competent to take his place as a company officer, and to take command of a field gun on shore, or a battery of guns on board a ship. I only wish to use this as an illustration, and if we could have an Act of Parliament to force every boy in the United Kingdom, between the ages of fourteen and sixteen, to attend drill classes four or five times a week for one hour at a time it would not interfere with his other occupations, and we should have a very fine body of trained men when they grew up. They should be taught to handle a rifle, to shoot, and to march. It seems to me that the Volunteer organisation might be used to help the idea along, and if rifle ranges are not available, a great deal can at any rate be done with Morris Tube practice.

Captain F. J. S. CLEEVE, R.A. :—The term conscription has always appeared to me somewhat indefinite and to overlap the natural boundary between the two principles of compulsory and voluntary service, as a system of conscription in which substitutes are allowed, constitutes voluntary service for those who can afford to provide a substitute. Compulsory service—that is, with exemptions but no means of evasion—is only cheerfully borne when the burden is evenly distributed, that is, when it assumes the character of universal service, to meet a prevalent condition of imminent danger. Even then popular feeling is apt to insist on the term of service being reduced to an inadequate minimum, thus confining its application to home defence, and exercising a restraining influence on a spirited and forward colonial policy. If adopted to maintain a small Standing Army the burden is very unevenly distributed, and the men concerned are placed at a disadvantage on return to civil life. Moreover, desirable men who have no particular objection to serve, escape, whilst others who have vital professional reasons for desiring exemption are taken, although likely to benefit the community more by devoting their energies to civil pursuits. Consequently, for a small Standing Army a system of substitutes could hardly be resisted. Now, a system of substitutes cannot exist concurrently with a voluntary system, for no man will enlist for less than the market rate for substitutes. Hence a compulsory system, or a system of conscription with substitutes, would appear unsuited to the conditions and duties of the British Standing Army and of

the nation. The British Army and its characteristics are essentially the product of the voluntary principle which differentiates it entirely from Continental Armies. The success of the voluntary system appears to me to require that the voluntary principle should be recognised to the fullest extent, with the utmost admissible elasticity as regards conditions of service. As regards the present position of the soldier, as a regimental officer with about 500 men on my pay list, I may say that though the system of messing has been improved, so that the soldier now derives the utmost value from his rations, I believe that the system of pay and clothing might be further developed, so that the man might derive increased advantage from the cost to the State to the end that cash payments might be less spasmodic, particularly as regards clothing compensation. As regards recruiting, having within the last few years performed the duties of Recruiting Staff Officer for the Woolwich District, for periods aggregating about nine months, my experience is that recruits may be divided into three categories, namely :—1. Those we desire to get. 2. Those we are content to take. 3. Those we accept under protest. The levy money to recruiters is the same in all cases ; in fact, those we accept under protest frequently yield double levy money, viz., on enlistment into the Militia and on subsequent enlistment into the Regulars. There is consequently a premium on recruiters "touting" (if I may be permitted to use the word) for the undesirable element, which is, moreover, more easily obtained—thereby driving away the desirable. It thus appears to me that a scale of levy money would be an advantage. I further submit that though the training of the soldier is a military question, the provision of the raw material and subsequent employment in civil life is essentially a national rather than a military matter. If the police force were found insufficient to protect life and property, it would surely be the householders who would demand an increase. A man with a vote is persistently canvassed by the Parliamentary candidate and an influential circle of his friends, but in the case of a man with sons probably possessing strong military instincts practically no influence is brought to bear to remove a long-standing and undeserved prejudice. If the maintenance of the County Regiment, Regulars, Militia, and Volunteers, could be considered as a county or borough matter, an improvement might, I think, be hoped for, and class three—that is, men accepted under protest—eliminated. In the early days of the British Army, when each officer brought his quota of men, such influence existed. Unless a larger number of men can be induced to come forward, an increase of the Army can only be made from amongst those who are at present rejected ; and the only remedy appears to be that the ballot for the Militia should no longer be suspended. If efficient Volunteers were exempt, it is probable that this would have the effect of filling all three branches, some entering the Volunteers to avoid the ballot and others making a virtue of a necessity by joining the Regulars. For reasons already given, substitutes on payment would be inadmissible ; but if discharge by purchase on being drawn, or exemption from the ballot on payment of a moderate sum were permitted, the measure could be made to represent merely moderate pressure brought to bear on waverers. Such payment would, in fact, constitute an ordinary license or tax on behalf of national defence, from which exemption could be obtained by joining the Forces, and would thus be fully consistent with the voluntary principle, and on these lines the ballot could be worked concurrently with, and as supplementary to, the existing system for the purpose of maintaining the required establishment.

Colonel F. J. GRAVES (Commanding the 83rd Regimental District):—The discussion to-day being upon the question of the difference between compulsory and voluntary service, I think it would be well to dig up and lay bare some of the difficulties of our own voluntary service system, and to see whether these difficulties are such that they would force us, in the long run, or perhaps in the no distant future, to adopt some modified form of universal or compulsory service. It is admitted that the territorial system based upon the

voluntary principle was founded upon the then necessities of our Empire. The Army that fulfilled the necessities of the Empire at that date has practically stood still as far as strength and numbers go. We have added some trivial additions in the shape of a few million square miles of territory here, there, and everywhere, and the effect to-day is that the Empire has outgrown its military clothes and equipment. It is proposed now to patch up our clothes by adding a little patch of red, or blue, or invisible green here and there all over the body politic. That, I believe, is a mere stopgap, for it is really a matter of markets. As we acquire fresh markets for the sale of our produce, I presume the Empire will increase by a few other trifling additions of several million square miles of territory, and that then the country will require a larger suit of military clothes, and we are to go on being patched up in this way. I maintain it is an utterly unsound policy. It is unsound from a military point of view especially, because whenever you want twelve, fourteen, eighteen, or twenty fresh battalions, what is done? The first thing a Cabinet Minister does is to tell the Commander-in-Chief for the time being, "You must reduce your standard." Whenever an addition is to be made to our Army we are to be condemned to go below the ordinary standard of physical capacity which has been recognised as necessary for soldiers. We have got to take the knock-kneed, the bottle-shouldered, and miserable weeds out of the gutter. What we want, I really believe, is that there should be a general consensus of opinion from a great many of the older soldiers than myself here to-day, backing up the strong words of his lordship in the chair and backing up the Under-Secretary of State for War in Parliament. With regard to the difficulties of our voluntary system, I have had something to do with them myself in commanding the regimental district in Belfast. Our difficulties have arisen from several causes, some of them very obvious. The question of population arises first. Our territorial system, based upon the voluntary system, was initiated on the ground of the then existing condition and distribution of population in the Kingdom. The whole of that is changed, but our territorial system has not changed. The population has, first of all, been drawn away from the rural districts to the centres of industry, and congested by education—the so-called, falsely-called, education of the Board Schools utterly lacking in technicality. The Board Schools turn our boys into make-believe clerks. Again they say that population follows the plough. I say that the stoppage of the plough in our country districts has not drawn men away as education has done, but has driven them out of the rural districts. I know this for a fact. We ask, "Where have they gone to?" To take one case—which your lordship will be very much interested in—that is Salisbury Plain: there was some very cogent evidence given before the Royal Commission on Agriculture a little while ago by an eminent man, who declared that in the Salisbury Plain district the agricultural population had been depleted to the tune of no less than 30 per cent. I can take you to one farm in that district where, within the last twenty years, the payments for labour on that farm have gone down £550 a year. Where have these men gone to? There is a great difference between Ireland and England. In England you can trace these men. The coal mines have drawn an enormous number. In the year 1884 there was just half a million men working in the coal mines; now there is close upon a million. That is only one case. I could take you to a dozen other cases—iron foundries, cotton mills, and so on. In Ireland it is quite the contrary. We lose our men out of the country altogether, I am sorry to say. For a population of 100 in the year 1831 there are only 60 in Ireland now. For a population of 100 in the year 1831 there are 207 in England and Wales; for the same standard there are 167 in Scotland. We are losing rapidly. Why? Because we have got no centres of industry to draw men to from the country, owing to wheat and other cereals going out of cultivation; and so we have to face these difficulties. We are broken-backed now, owing to Imperial necessities abroad disturbing the equilibrium, and the balance of our battalions abroad and at home. We are in

danger, speaking from the territorial system point of view, owing to the trend of the population away from the country districts to the centres of population, so that as a result, in the main—and very largely so—our territorial districts are not self-supporting. This is a great danger, and under the voluntary system it is difficult to know what the remedy should be. People say that if you introduce any form of compulsory or universal service, you beggar the country, you reduce the poorer classes to a state of pauperism. That is an idea which, I think, should be knocked on the head at once. At this moment we have 55,000 more paupers within the shores of the British Isles than in the whole of France, Germany, and Russia put together. So that compulsory service does not pauperise the people of those countries, as has been suggested. Again, it is said that if you have compulsory service you drive your manhood out of the country to seek work and labour elsewhere. That is not the fact. In the four years from 1891 to 1894 there were, I think, 365,069 emigrants from Germany; whereas from the British Isles in the same time, under a voluntary system, there were 1,190,200. So that the manhood of Germany, under compulsory service, is not driven out of the country. Then, again, there is one more point I should like to touch upon which comes very nearly home to myself—it has been lost sight of and only incidentally touched upon in one of the five essays referred to to-day—and that is the state of mind and the attitude of employers of labour. I find that with the increasing efforts made by my recruiting staff I have to face a most virulent form of increasing hostility on the part of large employers of labour. I had a set of questions made out which I sent out to my recruiting staff officers in the district asking for categorical answers, and the result has been the consensus of opinion which has been put before your lordship, that in nearly every case the general attitude of employers of labour is hostile to men joining the Militia. Some have gone so far as to put up notices in their mills that any man joining the Militia will be forthwith discharged. I know of many cases in my brigade where that has taken place. Others will not accept a man as a labourer unless he produces in writing his discharge by purchase from the Militia. I had a test case put into effect on that. A man applied for his discharge, saying that he could not get employment with such and such a man unless he produced his written discharge. We memorialised the employer, stating what the man had said, and asking whether the facts were so. He simply and laconically, and with commendable brevity, replied:—"The facts are as stated. So and so, Walker." That is the position of affairs I find in my district. This state of things is not confined to Ireland. I was shooting in the neighbourhood of a large English town during the last week, and what did I find there? I found a Militia battalion, the only Militia battalion in that district, close on 300 under strength. The moment I heard that, I began to make inquiries. I found two large employers of labour there—the two principal employers of labour in that town. One of these firms—I should like to give its name, but I think I ought not—has sent out a circular to all its *employees* saying that they will give every facility for those in their employment to join the Militia, the Volunteers, and the Yeomanry; and that has had a very good effect. The other, who employs as many thousand hands as the first-named employs hundreds, will not have a soldier of any sort, or kind, or shape, or condition, or position in his employ—neither Militiamen, nor Volunteers, nor anybody. They have put practically a boycott upon them. No wonder, then, my lord, that the Militia regiment is 300 under its strength. If we have to face an increasing hostility on the part of employers of labour, then I say that such scoundrels as boycott our Service in this way, for the sake of making a few extra pounds in the year more than their patriotic brother living and working over the way in his mill—I say that such scoundrels as that ought to be taken by the neck and forced to supply the sinews—what they would call "food for powder"—for our Army. One of the most important points about which I have given you figures in that same report is that of "drill on enlistment." I find, of my four regiments, that the one which has



given most men to the Line is at this moment some fifty men over strength. That first regiment drills altogether on enlistment, and our treatment of the recruits at the depot alongside their brothers of the Line is such that they are tempted into the Line in large numbers. The next regiment drills partly on enlistment and partly "preliminary drill," and the result to that regiment is that it gives just half the number of men to the Line than the first named. The other two regiments, though practically up-to-date (they are improving now), have drilled altogether preliminary drills. What is the result? They have given some paltry eighteen to the Line, as compared with something over 100 in the first case. If we have a ballot of a modified form for the Militia, with drill on enlistment in force, the men called upon as they are required, I believe you will be able to feed the Army without that miserable patchwork I referred to at first, and that miserable system, whenever we want a few extra battalions, of reducing the standard of physical efficiency all round.

Major-General G. U. PRIOR, *p.s.c.* :—The general question of voluntary or compulsory service has been so thoroughly gone into by the essayists and by previous speakers, that I would confine my remarks to show how the principles so ably expressed can be practically applied to our Army. The only form of compulsory service that there is any chance of using nowadays is under the Militia Ballot Act, and the best way of considering the matter is to determine what are the questions appertaining to the Army which most require looking into and would be affected by a Militia Ballot Act. These questions may be compressed into the three following heads:—1. To put the territorial system into working order, by arranging that the number of battalions at home shall either equal or exceed those abroad. 2. To bring men of maturer age into the ranks of the Service battalions, in place of the boys now there—this remark applying especially to the battalions in India. 3. To bring the Militia more thoroughly into the territorial system, by making it the first reserve of the Service battalions, and thus at the same time add to its efficiency as a military body. As regards the first question, which is equalising the number of battalions at home and abroad, there are at present, I believe, eight more battalions abroad than at home. If the Militia could help us in this difficulty by an Act being passed enabling them to be embodied in the Mediterranean, with the understanding that such service was voluntary, they could easily garrison the Mediterranean stations. The infantry garrison of Gibraltar consists at present of three strong battalions of infantry, but if the Militia were used for the purpose, four battalions of medium strength would be better, as it would give a greater number of non-commissioned officers to command the numerous small guards and parties furnished at Gibraltar. The Militia might furnish three of these four battalions. Again, at Malta, the infantry garrison consists of seven battalions; the Militia might find five of these. We should thus at once equalise the number of infantry battalions at home and abroad, and I need not remark how such a step would add to the efficiency of the Militia, for if eight regiments of Militia were to be always permanently embodied, the whole force would be gradually improved in their shooting and the other requisites of a military body. Should, however, it not be possible to garrison the Mediterranean with Militia, the only other way of equalising the number of battalions serving at home and abroad would be to make more battalions, applying the Militia Ballot Act for the purpose of obtaining the extra recruits, as the present state of the recruiting market does not seem to hold out any hope of it being able to do so without such a Ballot Act. The remarks made by the previous speaker point to the advisability of this. As regards the second question, that of having older men in the ranks of the Service battalions, a proposal has been made to form a local Army for India, with long service, and another Army with shorter service for England and the Colonies. But this would necessitate so many changes, that a modification of the idea would seem to be preferable. This is to alter the terms of the present enlistment, and to allow a certain number of men in each of the



Service battalions to serve with the colours for twelve years; and, at the end of that time, to be passed into the Militia for such a further term as was considered advisable. The number of twelve-year men in each battalion would be a subject for actuarial calculation, the battalions serving in India being naturally allowed to have more twelve-year men in their ranks than those at home. But the question arises, How are these men to be induced to serve for twelve years with the colours without the prospect of any pension on conclusion of their service?—which seems hopeless in face of the present heavy non-effective list. The pay of men who are serving twelve years might be allowed to increase gradually according to their length of service, as suggested by a previous speaker, but I am afraid that would not be enough inducement to make the men serve on. The only way, then, is for the State, as it cannot grant pensions, to offer the *certainly* of State employ to all men who have completed twelve years' service with the colours if they have done well. The railway companies alone require probably 2,000 men a year to fill up their waste in the way of porters, etc., whilst we also have the post office, police, and other Government offices, amongst all of whom it should be possible to obtain a sufficiently large number of berths to offer the men on completion of their twelve years. The ranks of the Service battalion might further be kept filled with men of maturer age, by allowing no recruit under twenty years of age to join them. As regards the third question, constituting the Militia the real reserve of the Service battalions: this would be done by making all the twelve-year men I have just mentioned above join the Militia on completion of their twelve years with the Service battalions, receiving Militia pay when actually out at training. These twelve-year men would all be in some State employ, so that arrangements might be made under which they would be called out for their training at different times. In addition to these twelve-year men, the Militia should receive into their ranks the boys of eighteen years of age who now wish to enlist for the Army, transferring such men to the Service battalions at twenty years of age, should they wish to go. Should any Militia battalion be under strength after it has received the twelve-year men and enlisted as many recruits as possible, the Ballot Act should be put in force in the district to which the Militia battalion is territorially affiliated, the county council of such district being called upon either to furnish the number of men requisite to bring the Militia regiment up to its normal strength, or pay by local rates for their substitutes. The Militia would thus be thoroughly affiliated to the Service battalions, furnishing them with recruits in peace-time and forming their first reserve in case of war. As regards the Reserves of the Army, these would be composed of the same class of men as now join it, with the exception of the men who had twelve years' service with the colours, and who would be in the Militia. In recapitulation, the alterations I have submitted would add greatly to the efficiency both of the Service and Militia battalions, at little extra cost to the State, but with the probable necessity of putting the Militia Ballot Act in force in some counties. On a war breaking out the Service battalions would not be at once disorganised by leaving half their men behind because they were too young to go, and receiving in their place a number of untrained Reservemen whom they had never seen before; the battalions would be fit for service as they stood. The first reinforcements required by them would be supplied by the Militia of their own counties, whilst the Reserves would not be called upon to furnish men at once, and would thus have a little time to get trained before they went to war. No remarks have been made touching the Volunteers, as their organisation is so good, and the Force so excellent, that any action regarding them seems unnecessary. I have tried to bring to your notice the requirements of the Army which would be specially assisted by the passing of a Ballot Act, though I am afraid the country does not seem inclined at present to accept one. I must thank you, my lord, ladies, and gentlemen, for the kind way in which you have listened to these remarks.

Colonel H. H. A. STEWART (Retired Pay, late Norfolk Regiment, and Donegal Artillery Militia):—I rise with some considerable anxiety, because I conceive that there is an atmosphere of compulsion in this lecture room—that is, the subject under discussion refers to compulsory service, in the Militia to begin with. I have no hesitation whatever in saying that, from my own experience of thirty-six or thirty-seven years, the voluntary system has never had a fair chance. I think some of the speakers who have preceded me have got just a little bit away from our subject. I think also that the essayist, although his essay is undoubtedly a most interesting and able one, has been a little discursive. Colonel Fergusson has referred to the advisability—a great subject before us all now—of the increase of the Army. I, being an Irishman, can quite understand the anxiety to increase the Army, because—as we have hardly ever been able to keep the Regular Army or the Militia up to its proper establishment—what we are going to do now is to increase that establishment. I think many of you will agree with me that in this essay Captain Ellison has adhered to the abstract proposition that was put before him. With the exception, perhaps, of Major-General Maurice, almost every speaker this afternoon has, I think, left the abstract proposition and given us the concrete, putting before us their own opinions as to what is to be done with the British Army. The essayist has not, however, referred in his essay to the advantages of voluntary or compulsory service, specially with regard to this country, *i.e.*, as it applies to Great Britain and Ireland only. None of the speakers have alluded to one little error of the essayist. I do not wish to pose by any means as an elaborate military historian, but at page 382 of the JOURNAL, in which this essay appears, the essayist says, “Langenzalza, Königgrätz, Wörth, and Sedan had been fought and won.” I understand from that, if language means anything, that those battles were won by Prussia; but I submit that such is not the case, for Langenzalza was a victory for the Hanoverians over the Prussians in 1866. The essayist is, to a certain extent, on my side in this, because, although he habitually speaks of “universal” military service in his very able essay, he also speaks of “all citizens,” “the whole manhood of the country,” “the entire citizens,” and “the manhood of a nation.” I submit, with great diffidence, that the correct term is not “universal” military service; I submit it should be the “manhood” of the nation between certain ages, say, 20 to 40 or 45 years.

Major W. C. ROPER-CALDBECK (5th Bn. The Royal Dublin Fusiliers):—My lord, ladies, and gentlemen, it is with the greatest diffidence that I rise to speak before such an audience of experts as this. I only do so because I am intensely interested in the future of the British Empire, and recognise in this meeting an evidence of an awakening which will be, I hope, a blessing to this country. I will group my remarks under two headings: one, destructive criticism; and the other, constructive criticism. As to the first, I need not say very much, as the preceding speakers have gone over the ground, except that the present military system appears to be, on all hands, condemned. It appears that all our real soldiers are in India and the Colonies, and that our home battalions are merely nurseries of striplings. Our Prime Minister has made the humiliating confession before the world that we are not a military nation. And yet we have upwards of 500,000 men, including Indian troops, under arms all the year round! Our military expenditure vastly exceeds, in proportion, that of any other country in the world, and yet we are not a military nation! It is not a lack of numbers that we suffer from so much as a lack of quality, due to the short-service system. It is therefore well that the country is awakening to the fact that the present system has been, and is, a failure. Our Army does not represent the manhood of England; the men are not the true fighting men of the country. Moreover, many of them are not fairly representative of the working classes of this country from a moral and intellectual standpoint, and I think this is an important matter for England in carrying out her

mission of civilisation amongst the wild people with whom her soldiers come in contact. With regard to constructive criticism, England, in my opinion, requires a Regular, or, as it may be called, a Colonial Army, for its work beyond the seas, for which the application of the ballot would not hold good. It would be unjust to compel a small proportion of citizens, chosen by lot, to spend years abroad in unhealthy climates; such an Army must always be enlisted voluntarily. For an Army that has to go abroad to fight, not only against men (of the fiercest fighting peoples of the earth), but against Nature in her severest aspects, you want the very best men you can find, and you are obliged to go to the labour market and compete with the employers of labour. You will not get strong and intelligent men to give up the best years of their lives without some assurance of comfort during their middle life and in their old age. The Government, therefore, should enlist picked men for twenty-one years, the first year being probationary at the depot. On conclusion of their service suitable employment should be provided for them for another term of years, after which they would receive a pension. Under this system, carefully worked, about 12,000 or 14,000 recruits would be required annually, of whom probably not more than 50 per cent. would remain, after twenty-one years' service, to be provided with employment. Under this long-service scheme the present Reserve would cease, and its place be taken by a thoroughly re-organised Militia, for which the ballot might be used where necessary: officers and men to be enlisted for foreign service; recruits to get three months' drill with their own staff; battalions to get six weeks' training each year, and embodied every five or six years for six months; officers to receive a retaining fee of, say, £50 per annum, in return for which the Government could exact a thorough knowledge of their work. This sum, by contributing towards the cost of uniforms, etc., would enable many young fellows to join the Militia branch of the Army who are now deterred by the expense.

Sir WILLIAM A. FRASER, Bart. (late Captain 1st Life Guards):—The only reason that leads me to address you is that I have been waiting to hear the opinion quoted of the most practical soldier that this country has produced. I would advise everyone to take the trouble to look back to a letter written by the Duke of Wellington, on this very subject, and strictly to the point. It was written by the Duke a few years before his death. It was a private letter, but written, as sometimes occurs in official life, for the purpose of publication. I remember the sensation that it made. The Duke dealt mainly with the Militia. I believe that the finest soldiers that this country has produced were the Militia. At the close of the Peninsular War: the noblest army that Britain has ever had were the soldiers who remained in this country; who had not served in Spain, namely, the Militia. They had been drilled, and almost over-drilled. They were an absolutely ideal army. I remember perfectly that the Duke used this remarkable expression: that unless the Militia were put upon a thoroughly sound, practical, and national footing, he trusted that the Almighty would not leave him in this world long enough to witness the tragedy which he apprehended. I wish that letter to be studied and learnt by heart; because it comes from a man who had no humbug and nonsense about him. He took a practical view of the state of things, and he hoped that the Militia—that strong, vigorous force of England—would be practically and actually embodied. There is one point which has not been alluded to to-day. It has been said by men of experience, and men without experience, that it is hard lines to take an educated man—what is conventionally called a gentleman—and put him in the ranks, making him clean his boots, and belt, and rifle. I do not think that there is the slightest hardship in a man who has taken a first class at Oxford doing any little service which the Militiamen would have to do. Many whom I am addressing have known by experience that to ride on a bare-backed or stirrupless horse on a hot summer's day for three months is not a pleasant way of passing the time; but we have gone through it, and we did not

grumble. With cavalry it is different. A good many of us would not care to have to clean a horse twice a day. The only other matter I wish to mention is the compulsory drilling of boys in all schools. I cannot for the life of me see not only the smallest objection to that, but I cannot understand, in a country like this, which teems with good schools, why it was not done long ago. I was at school at Brighton, where there were no end of dukes and marquises; once a week Sergeant-Major Townshend drilled us. The result was that before we left school there was not one of us who did not know his drill; and if we had been only instructed in the manual and platoon, I can only say that, instead of grudging the time, we should have been delighted. I would make every school-boy in this country learn his drill up to a certain point, and I would have a return made to you, my lord, every six months, of the number of boys in each school who could go through their drill.

The CHAIRMAN (Field-Marshal Viscount Wolseley):—As no one else seems anxious to continue the discussion this afternoon, I will say a few words merely to sum up the remarks that have been made, and partly to give you my own crude views upon the subject which has been so ably dealt with, I think, in the essays put forward for this competition. In the first place, while the subject is quite in my recollection, I will refer to what has been said by Sir William Fraser *à propos* of the Militia. He quoted that most interesting and most important of all letters we have upon the subject of invasion, which was the real subject dealt with in the letter of the Duke of Wellington he referred to. It dealt incidentally with the Militia, but I would remind Sir William Fraser and all those who have heard him, that the Militia the Duke of Wellington referred to was practically quite the same as the Regular Army. It was a force that had been then under arms for a considerable number of years, and had been drilled and trained under Regular officers, and was in every sense of the word, except in name, a part of the Regular forces of the country. Remember, that if you were to make the Militia of the present day what it was then, it would be quite as expensive as the Regular Army; and, moreover, we should have quite as much difficulty in filling its ranks. I do not think you can get over the very serious difficulty we have in finding men for our Army by merely calling one part of the Army, Militia, and the remainder troops of the Line. I think, gentlemen, that our discussion here this afternoon of this important question is very *à propos* at the present moment. More than one of the speakers have said, it is generally accepted throughout the country, among all classes, that the Army must be increased. In fact, that if this is not done, the Army will cease to be able to do the duties for which the country pays it. We are a very practical and very business-like people, and I think the country will realise how necessary this increase is when our present military position is explained by men in important positions who have no object in the statement except the wish to see the Army able to perform the duties for which it exists. At the present moment we require a very large number of recruits annually. Of course, if you increase your Army you will require an additional number of recruits, and thereby you will increase the difficulty you already have in maintaining the Army. I made some notes before I came to this meeting, and I find that for the last ten years the average number of recruits that we have raised, the recruits who have annually joined the Army, have been over 32,000 a year. The largest number was in 1892, when we raised 41,000. This year, as far as I can make out, and I think I am tolerably correct in my prognostication on the subject, we shall have raised about 35,000 men. I am sorry to say that a certain proportion of them—about 29 per cent.—will be what is commonly called and known to the Army as “specials,” that is, men below the standard, the rather low standard we have for our infantry. That number of specials is, of course, higher than we should like to see in the Army; and I would like at once to let the world know that there is no soldier in England belonging to the Army, or who has anything in the world to do



with it, who would wish to see the usual standard of the Army reduced in any way whatever. It can be no consolation to any man who has a regard for the Army, or who serves in it, to find that the Army is to be composed of men of 5 feet 3½ inches instead of 5 feet 6 inches. There is no officer in the Army, no sergeant, no soldier, who would not prefer to serve in a regiment where the average was 5 feet 7 inches, 5 feet 6 inches, or 5 feet 5 inches, instead of being much lower. But the fact of the matter is, that as we cannot get men of 5 feet 6 inches or 5 feet 5 inches, we are obliged to reduce our standard or else hold out increased inducements to men to join our Service. Now, there has been a great deal said in the essays, the subject of which we are met to discuss, with reference to compulsory service. Some have gone in for compulsory service pure and simple. It is a very simple process, gentlemen, by which you can fill your Army if your people will agree to it—there is nothing simpler. In others of these essays the writers are in favour of the system of voluntary enlistment, which, I may say, from time immemorial has been the system of filling the ranks of the Army of this country. Our Army is a very peculiar one, and differs very greatly indeed in all points from those great Armies maintained by various Continental nations. Our Army is small for a great Power—the smallest in the world, certainly the smallest in Europe. It has two great functions to perform. The greater part of our Army is always abroad, serving either in the Colonies or in India, or employed in manning those fortresses which are necessary for the protection of our great naval coaling stations. Our fleet being of the first consequence to this country, it is necessary that the wants of that fleet abroad should be first looked after, and in order to look after those interests it is absolutely necessary we should have coaling stations all round the world, wherever we have territory—and we have territory in most latitudes and in most longitudes—and those coaling stations must be protected: they must have fortifications, and those fortifications must have sufficient garrisons. At present, as well as I remember, the Army of England consists, in round numbers, of 220,000 men. Of that number about 117,000 are abroad, and only 103,000 at home. That alone tells you what a very different Army ours is from the Armies of other Powers. I do not think that even any of the gentlemen who have spoken this afternoon proposed to fill the ranks of our foreign Army by compulsion. It has never been done by any nation of the world that I am aware of. You may raise an Army for home defence by compelling men to serve; but I think that in all the great nations in the world, when they have wanted to send Armies abroad, or required troops to garrison foreign stations, they have made that foreign service acceptable to the soldiers sent abroad, and have made that service one of profit to them. There is another distinction peculiar to our Army—a very remarkable one, and which I think ought to add to the wish of men to enter it—and that is, our Army is almost always at war. We are the only nation in the world that may be said to be always at war. It is difficult to look back over the last thirty or forty years to a year when our Army was not fighting, when there were not some of Her Majesty's troops fighting in some part or other of the world. To many this is an inducement to enter the Army. I have always found that after any very severe loss to a regiment or brigade, recruiting almost invariably went up instead of going down. You hear of a regiment being roughly handled, of a disaster such as at Maiwand, for example. What is the result? Upon that occasion, for example, the territorial regiment almost supplied at once the number of men lost—I think some hundreds were wanted. So that the fact of our being so constantly at war is no deterrent to our soldiers against enlisting. But, at the same time, I think it would be generally admitted by those who have spoken, and by those who have considered this question, that we could not apply a system of compulsory service to our Army abroad. If, therefore, we would go in for compulsory service at home, we should still be obliged to have a different system for the Army abroad, and I have only to mention this to any man



who has ever had to administer the affairs of an Army, for him to agree with me in saying that it would be almost impossible to work any Army in the world under such a dual system. We have had one or two allusions here to the fact of having a separate Army for India. I should be intensely opposed to any such proposal. I had the advantage of serving in India before the Mutiny, and of seeing and serving alongside with the European troops then in the Company's service, and very fine men they were. I am glad to see that one officer who has spoken has told us that he belonged to the artillery at that time—I think the Bengal Artillery was one of the finest bodies of men that ever fought for this country, and I am sure the same remark may be applied to the infantry battalions which I knew so well, the Bengal Fusiliers and the Madras Fusiliers. I should be the last person to disparage their fighting efficiency in any way whatever. I always had the highest appreciation of the manner in which they fought throughout the Mutiny upon every occasion. But I must say that, in my humble opinion, their discipline was not as good as in the Queen's regiments of those days. I know this was the general impression of those around me. Perhaps it was a one-sided impression; but I think it will be generally admitted that purely local corps have to contend against greater difficulties than those which are sometimes at home and sometimes abroad. If you will carry your minds back to the Mutiny, and to the local European regiments you served with then, I think you will remember that in a disciplinary point of view we had more trouble with the European regiments of the old East India Company than we had with the regiments of what was then called in India the Queen's Army. I should be very sorry indeed to go back to having a distinct Army for India. It might become even a danger to the country. Some of the speakers here this afternoon said they would like to go back to long service. Well, gentlemen, according to my notions of long service, I think you might just as well go back to cross-bows. I will tell you the reason why: not because I think rifles are so very superior to cross-bows, perhaps, but for the simplest possible reason—that you could not get the men. I know it is a very commonly accepted idea in certain clubs and newspapers that the short-service system was invented by some crotchety old fellow at the War Office who wished to change the general constitution of the Army. But the fact is, gentlemen, the short-service system was adopted because we could not get men to serve for a long period. The Army, I think for ten or fifteen years before the introduction of short service, was usually 10,000 men short annually of its establishment. We could not get the men. You might just as well, at the present moment, advertise for men in armour, and hope to get them to come forward at the various recruiting places in England, as advertise for men to come forward and voluntarily serve for over twenty-one years. According to my view of it, I do not think our Army is sufficiently large to compel us to go in for any heroic change as regards the mode of getting men. I believe that the voluntary system, which has served us so long, will serve us still if we only adopt the common-sense idea about an article, viz., that if you want to buy an article you have to pay for it. If you want to get a skilled artisan you have to pay for him, and if you cannot get him for sixpence you have to give him a shilling. As long as you make the Service popular with the people from whom you expect to get recruits you will be able to get as many as you want. That is my belief. With regard to the inducements that ought to be held out, I think, to a man to enlist, those inducements can be either in the shape of money, or they might be in the shape of employment when he leaves the Army. If we could say to the recruit, "When you leave the Army I will do the best I can for you, and if you leave the Army with a good character I will give you some suitable position in the Government service." Now sometimes we are, I think, a very hypocritical people. I do not mean to say individuals are so, or that any particular Government is, or that any particular part of a Government is; but I know that we go on harping upon the

idea that we have done a great deal for the Army because we have said that in the future—I believe it is the future and not the present—a certain number of men who leave the Army are to be converted into postmen. That is, I think, as far as we have gone yet. I saw it recently stated in the newspapers that a very important gentleman from the Post Office had addressed the little boys who were growing up to be lads, and who were employed in running about with telegraph messages. He apologised to them for the fact that in future a certain number of the men who were to be postmen were to come from the Army. He was quite apologetic. That is not my view of employing Reservemen or soldiers in the Post Office. My view would be to tell these young boys, who have reached the age of seventeen, eighteen, and nineteen as messengers:—"I shall not employ you as men unless you go into the Army and serve your seven years there; but if you do that, and come back with a good character, I will give you a place here." That would be the practical proceeding from the soldier's point of view. But, gentlemen, we have had numerous boards, numerous committees—I think some of them Parliamentary committees—to deal with this subject. They have gone into the question, and have issued their long reports; but I cannot say that anything very practical has ever come out of them. There are at the present moment—paid by the State—thousands of offices all over the country—small clerkships, employment in the Post Office, employment in the police, employment in all the various great offices of the country—thousands of offices that can be as well filled by the men leaving the British Army as they can by any other men in this country. In fact, gentlemen, it would be difficult for me to point out an office in England where all the minor situations could not be filled by men who leave the Army annually to go into civil life. All I can say is, that if the people of this country are really honest, and determined in their own minds not to have compulsory service forced upon them—if they are determined to have an efficient Army—the best thing they can do is to make Parliament insist upon these various positions in the public service being filled hereafter by men who have served either in the Army or the Navy. If they will do that they will give a popularity to these two Services that they never had before. I know perfectly well there are men who enter the Army for whom it would be impossible to find occupations afterwards in the Civil Service. I know there are men tramping about the country who, if you found them employment in civil life to-morrow, would not hold it twenty-four hours. They were born tramps, and they will continue tramps for the rest of their lives. Unfortunately one of the defects of enlistment—voluntary enlistment—is that when a man comes up to a certain standard of physical size we have to take him into the Army. We cannot possibly find out where he comes from; we cannot tell his age by his teeth, as in the case of horses; we cannot find out what his character is, because we do not know where he was born or where he has lived. We have to take him if he comes up to a certain physical standard, and therefore it must be very plain to everyone that the professional tramp enlists at some time or other in his life. There is scarcely a tramp in England who has not been in the Army. We know that. Everyone who has paid attention to enlistment knows it perfectly well, and if you have ever had the pleasure of living in the county of Surrey or any of the home counties, in the autumn and summer, and have had the pleasure of riding much along their roads, you will be met day after day by tramps, who will stand at attention as you approach, and who will pull out their parchment certificates—they may not be their own; very probably they are not—and say, "I have not been able to get any occupation because I am an old soldier." There is not a word of truth in the statement; and I know that you find him occupation, or put him down to break stones, or set him to clean windows, he would not hold that position for twenty-four hours. Once a tramp always a tramp; and you must not judge of the Army by these men you casually meet on the roads, or by the interesting letters which occasionally appear in the newspapers from the casual wards about old soldiers. I have lately read with

great interest the letters of a correspondent giving his experience in these casual wards. I think it was in the *Pall Mall Gazette*. The gentleman who wrote the letter said that upon the second or third day he was out he met two discharged soldiers, whom he had met two days before, for whom employment had been found. He said "Hallo! Why did not you keep your employment?" They said, "We had not the slightest intention of keeping it." He said, "Why did not you keep it?" And they said, "Because they asked us to work." Those are the sort of discharged soldiers you meet in casual wards, and for those men it is impossible to legislate. But I am quite certain that if you are in earnest to fill our Army with good, well-grown, stalwart men, you have only to hold out sufficient inducements to obtain what you want for your Army, both at home and abroad. I hope that this discussion will in some way lead to the ventilation of this subject, and I hope and believe that it will be of some benefit. I hope most sincerely that all that has taken place here this afternoon may tend to make this subject generally more known throughout the country, and turn the attention of all those who have never thought of it before to this most serious question, on the solution of which depends the future welfare of our Empire.

## THE OLD ROYAL ARMY OF FRANCE.

*By Lieut.-General F. H. TYRRELL, late Indian Army.*

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*"État Militaire de France, pour l'année 1767," par MM. Montandre Lonchamps, Chevalier de Montandre & de Roussel. A Paris, chez Guillyn, Libraire, quai des Augustins du côté du Pont S. Michel, au Lys d'or, 1767. Avec Approbation et Privilège du Roi.*

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THE introduction of firearms into common use in the fifteenth century revolutionised the methods of mediæval warfare, and substituted bodies of professional soldiers for the knights and men-at-arms who had constituted the strength of the Armies of mediæval Europe. Statesmen like Ximénès and Richelieu soon learnt to appreciate the worth of the weapon thus furnished to the hand of absolute authority, and employed all their talents in improving a system which enabled them to break the power of the nobles and crush the liberties of the people. The work commenced by Richelieu was perfected under Louis XIV. and Louvois; and the victories of Lens and Rocroy destroyed the military supremacy of Spain and gave the French Army the first rank among the forces of Europe. Until the rise of the armed power of Prussia under Frederick the Great, France gave the law to the rest of Europe in all matters military. She was the first to set the example of clothing her troops in a uniform dress, and to revolutionise tactics by equipping them with the bayonet. But to Englishmen the chief interest of the old Royal Army of France lies in the fact that it was for a century the constant and worthy opponent of the British Army in the battle-field and in the trenches in every quarter of the globe; and if Britons can boast of Blenheim and Dettingen, of Quebec and Gibraltar, Frenchmen may point with equal pride to Steenkirk and Fontenoy, to Minorca and Yorktown.

The history of many of our famous regiments is interwoven with that of the gallant foemen who crossed sabres and bayonets with them on many a well-contested field.

An account of the famous exploits and ancient traditions of the old French Royal Army might be easily made to fill many volumes. The following details of its organisation, composition, and equipment are briefly compiled from the *Annuaire Militaire*, or French Army List, for the year 1767, after the Army had been reduced to a peace establishment on the conclusion of the Seven Years' War.

#### MILITARY ADMINISTRATION.

The King was Commander-in-Chief of the Army; the Duc de Choiseul, Peer of France, Knight of the Orders of the King and of the Golden Fleece, Lieut.-General in the Army, Colonel-General of the Swiss and Grisons, Governor-General of Touraine, Governor and Grand Bailiff of the districts of the Vosges and of Mirecourt, was Secretary of State for War as well as for Foreign Affairs, and Grand Master and General Superintendent of Posts and Communications.

In each of the thirty-eight provinces of the kingdom there was a military governor-general, who was a marshal of France or general officer. The provinces were sub-divided into military districts, each governed by a general officer with the title of lieutenant of the King or lieutenant of the marshals of France, according to the importance of his command.

The great fortresses and strong places of the kingdom had each a general officer as governor, with a lieutenant under him and a fort or town-mayor. In each military district there was a commissary-general for supply and a paymaster-general for finance under the orders of the War Department.

There was no permanent organisation of the Army in divisions or brigades, which were formed when the troops took the field.

#### GENERAL STAFF.

The highest rank in the Army was that of marshal of France, since the office of grand seneschal and constable of France had been suppressed by Louis XIII. in 1617. The same King created the rank of lieutenant-general of the Royal Army in 1638. The office of *maréchal-de-camp*, answering to our major-general, was created by Henri IV. in 1598. The office of brigadier-general was first created by Louis XIV. in 1667.

In 1767 there were eleven marshals of France, 228 lieutenant-generals, 293 *maréchaux-de-camp*, 123 brigadier-generals of cavalry, 19 of dragoons, and 180 of infantry, making 854 general officers in all. Of these, 20 were princes, 43 dukes, 16 viscounts, 211 marquises, 179 counts, and 36 barons, and most of the remainder bore the title of *chevalier*, the few plain *messieurs* among them were nearly all officers of the engineers and artillery. These figures show the aristocratic character of the Royal French Army, in which noble or gentle birth was the only passport to a commission and the chief recommendation for advancement. The excessive number of general officers was due to the necessity of providing a career and honourable and profitable employment for the



numerous scions of the aristocracy, whose interests were too often the principal objects considered in French Army administration, and retired lists and unemployed supernumerary lists for general officers were unknown in those days.

The marshals of France composed a Court of Honour, which regulated personal questions and disputes among officers of the Army. It met only upon occasion, and had a registrar and a secretary to prepare its minutes and record its decisions.

Ten general officers were inspectors-general of cavalry and dragoons, 14 were inspectors-general of infantry, 2 inspectors-general of light troops, and 3 quarter-masters-general.

The uniform of general officers was a royal-blue coat, with scarlet facings and gold lace, and scarlet waistcoat and knee-breeches. The different ranks were denoted by the amount and arrangement of gold embroidery on the coat and vest. A white plume was worn in the hat. General officers who were proprietary colonels of regiments were permitted to appear in the uniform of the regiment with the hat and plume of a general officer.

#### MILITARY ORDERS.

The Order of the Holy Ghost was instituted by King Henri III. in 1578. The King was chief of the Order; there were 4 grand officers and commanders and 80 knights. The Royal Military Order of Saint Louis was instituted by Louis XIV. in 1693. Its motto was "*Bellica Virtutis Premium*." The King was sovereign chief and grand master of the Order. There were 20 grand crosses and 40 commanders for the Army, and 2 grand crosses and 8 commanderships for the Navy. Only Catholics were eligible for the above Orders; an order of military merit was, therefore, instituted for Protestant officers in 1759. It had 2 grand crosses (1 for the Germans and 1 for the Swiss) and 4 commanderships (2 of which were for Germans and 2 for Swiss).

#### COMPOSITION OF THE ARMY.

The Army consisted of the Maison du Roi, or Household Brigade, comprising 9 companies of mounted and 3 of dismounted troops;

- 2 regiments of Foot Guards (1 French and the other Swiss);
- 34 regiments of Cavalry of the Line;
- 16 regiments of Dragoons;
- 7 regiments of mixed Artillery and Engineers;
- 92 regiments of Infantry of the Line;
- 6 legions of Light Troops;
- 10 companies of Gendarmerie and 34 companies of *Maré-chaussées*; and
- 31 battalions of recruits.

#### MAISON DU ROI.

The Household Troops of the French King were divided into

Guards of the Inner Court and Guards of the Outer Court of the Palace.

*Guards of the Inner Court.*

No. of Cos.	Title of Corps.	Uniform.	Facings.	Lace and Buttons.	Date of Formation.
4	Gardes du Corps ...	Blue	Scarlet	Silver	1445
1	Cent-Suisses de la Garde ...	Blue	Scarlet	Gold	1481
1	Gardes de la Porte Ordinaire	Blue	Scarlet	{ Gold & Silver }	1659
1	Gardes de la Prévôté de l'Hôtel du Roi, ou Hoquetons ordinaires de Sa Majesté ...	Blue	Scarlet	Gold	1271

*Guards of the Outer Court.*

1	Gendarmes of the Guard ...	Scarlet	{ Black Velvet }	Gold	1609
1	Chevaux Légers de la Garde...	Scarlet	{ Black Velvet }	Gold & Silver	Unknown
1	Mousquetaires du Roi, 1st Co. (Mousquetaires Gris)	Scarlet	Scarlet	Gold	1622
1	Mousquetaires du Roi, 2nd Co. (Mousquetaires Noirs)	Scarlet	Scarlet	Silver	1660
1	Grenadiers à Cheval ...	Blue	Scarlet	Silver	1676

The Maison du Roi ranked above all other troops and always took the right of the line on parade; and the Gardes du Corps ranked above all other troops of the Maison du Roi. The first company of the Gardes du Corps was called the Scotch company, raised in 1445 from the Scots, nobles and gentry, whom Archibald, Earl of Douglas, nick-named Tine-man, brought over to France to aid Charles VII. against the English. For long they were recruited exclusively in Scotland, and their titular captain was usually the Scottish King or Prince Royal; but after the Reformation, which dissolved the old long-standing alliance between France and Scotland, their ranks came gradually to be filled by Frenchmen.

The second company was called the French first company, and the others the second and third French companies. The first two were raised in 1475 and the last in 1514. All the privates of the Gardes du Corps were of noble birth, and noble or gentle blood was an indispensable qualification for enlistment in any of the mounted troops of the Maison du Roi.

Each company of the Gardes du Corps had 336 fighting men, 6 trumpeters, and a kettledrummer, and was divided into six brigades; the first three brigades were commanded by lieutenants, and the last three by ensigns.

The officers of each company were a captain, 3 lieutenants, 3 ensigns. The N.C.O.'s were 15 exempts (sergeants), 12 brigadiers (corporals), 12 sub-brigadiers, and 6 standard-bearers. Most of the officers had general rank in the Army. The names of all the non-commissioned officers of all the companies of the Maison du Roi are

given in the Army List. The exempts, or sergeants, of the Garde du Corps had the rank of colonel in the Army.

The Gardes du Corps served both on foot and on horseback, being mounted in the field and on escort duty, and standing sentry over the royal apartments in the Palace. Only a portion of these were present at Court in time of peace, the remainder being granted furlough for nine months in the year. Their arms were a sword and pistol. There were from 16 to 17 carbines in each brigade. The vests, kneebreeches, and stockings of the Gardes du Corps were scarlet; on mounted duties they wore white leather breeches and jack-boots. The pouch-belts and waist-belts were of silver lace, with a silk stripe in them of a distinguishing colour in all the four companies.

The Scots company had white, the first French company green, the second blue, and the third yellow. The three troops of Life Guards in our own Army were similarly distinguished, and the distinction is still preserved in the coloured cords worn on the pouch-belts of the 1st and 2nd Life Guards. The shabracque of the Scots company was scarlet trimmed with silver lace; the horse furniture of the other companies was of the colour of the silk stripe in their bandoliers. The standards of each company were of the same colours with the device of a golden sun, and the motto "*Nec pluribus impar*"; a white silk streamer an ell long was attached to the spear-head of each standard. There were six standards in each company, one for each brigade. On service and in the field each company of the body-guard formed two squadrons; the whole thus composing a strong regiment of eight squadrons.

Up to the time of its dissolution the troopers of the Scots company of the Gardes du Corps answered to the roll call by the word "Hamir" (I am here), according to the custom of the Scots who had originally filled its ranks.

The company of the Hundred Swiss was commanded by a captain with the rank of colonel in the Army. It had 2 lieutenants also of the rank of colonel, 2 ensigns with the rank of lieutenant-colonel, 2 aide-majors (adjutants) with the rank of captain, 8 exempts or sergeants also with the rank of captain, 6 corporals with the rank of lieutenant or second lieutenant, according to their standing; 90 privates, divided into squads of 15 men each; 4 drummers and a fifer. It had also 4 quarter-master-sergeants, a standard-bearer, a judge-advocate, a chaplain, a surgeon—all with a superior grade in the Army. The captain-colonel was always a Frenchman; the officers and sergeants were half of them French and half Swiss; the men were all Swiss by birth and Catholics by religion.

The company had three orders of dress. The Court dress was a Tudor doublet and trunk hose of royal-blue slashed with crimson, a black velvet toque with a white plume, a starched ruff, silk stockings, and white rosettes in the shoes. The ordinary dress for parades and escorts was a royal-blue coat with scarlet facings and gold lace, scarlet vest, breeches and stockings, a three-cornered hat bordered with gold lace, and a white cockade. The arms carried with the above dresses were a halberd and

a long basket-hilted sword. The field-service dress, which was worn when the company followed the King to the wars, was of the same colours as the parade dress, but less richly laced with gold. A bearskin cap and long white gaiters were worn with it, and white leather accoutrements. The arms were a musket and bayonet, and a large sabre. The colour of the company was blue, with a white Swiss cross, on which was the motto "*Ea est fiducia gentis.*" In the first and third cantons, the crown and royal monogram in gold; in the second and fourth, a golden rock beaten by the waves of a silver sea. The company served in the field as a grenadier company with the regiment of Swiss Guards. The last time it took the field was in the campaign of Flanders in 1744.

The company of the Gardes de la Porte is said to have been the most ancient in the Maison du Roi. The date 1659 given above as the date of its formation is probably the date of its incorporation in the Household Brigade by Louis XIV. It was composed of a captain, 4 lieutenants, and 50 guards, and divided into 4 squads, which took it by turns to serve at Court for three months at a time—like the Gardes du Corps. The colours of the uniform were the same as those of the Hundred Swiss, embroidered both with gold and silver lace. The bandoliers and waist-belts were also of gold and silver mixed.

The company of the Guards-Provost was raised by Philip III. the Bold. It was composed of a grand provost, a lieutenant-general (who took his place when he was absent), 4 lieutenants, 12 exempts, and 88 guards. The company was divided into 4 reliefs, each of 1 lieutenant, 3 exempts, and 22 guards, serving at Court in rotation for each quarter of the year. The colours of the dress were royal-blue and scarlet laced with gold, and a badge, with the royal coat of arms in gold, silver, and enamel, was worn on the right shoulder. The badge of the company was the club of Hercules and two naked swords with the motto "*Frit Laco quoque coquila monstris.*"

The Great Seal of France was confided to the guard of this company.

The above two companies were only Palace Guards, like Her Majesty's body-guard of gentlemen-at-arms, and had no military value.

The division of the Maison du Roi into inner and outer guards was probably established by Louis XIV. in imitation of the similar distribution of the Household Guards of the Imperial Seraglio at Constantinople, with which Court Le Grand Monarque kept up intimate relations.

The guards of the outer court were frequently spoken of as the Maison Rouge, from the red colour of their uniforms.

The company of the Gendarmes de la Garde du Roi had nothing to do with police functions. The old signification of the word "gendarme" was simply "man-at-arms." This company was raised by Henri IV., and the King was its titular captain, as well as of the other companies of the Maison Rouge. Its other officers were a captain-lieutenant, 2 captain-sub-lieutenants, 3 ensigns, 3 guidons, and two aide-majors. The non-commissioned officers were 8 *maréchaux-des-logis*, 8 brigadiers, 8 sub-brigadiers, and 2 standard-bearers. There were 210 gendarmes, of whom

the 10 seniors were excused from service, 3 trumpeters, and 1 kettle-drummer. The quarters of the company were at the Palace of Versailles.

The uniform was a three-cornered hat bordered with gold with black cockade and white plume; a scarlet coat with black velvet facings and revers, richly laced with gold on all the seams; black velvet waistcoat laced and trimmed with gold; white leather breeches, and jack-boots. The belts were gold lace, and the horse furniture black velvet trimmed with gold. The standards of the company were white satin fringed with gold, bearing the device of golden thunder-bolts, and the motto "*Quo jubet iratus Jupiter.*" They were kept in the corridor of the King's bed-chamber, from whence a detachment went to take them when the company paraded. The company of the Chevaux-Légers de la Garde was the only other company which enjoyed the high privilege of lodging its standards in the same august precincts.

The date of the formation of the Chevaux-Légers is not given in the *État Militaire*, but it was probably of late creation. Its officers were a lieutenant, 2 sub-lieutenants, two ensigns, and four cornets. Its strength was 100 non-commissioned officers and men, the two senior *maréchaux-des-logis* acted as aide-majors. The other details of its organisation were similar to those of the company of gendarmes. Its uniform also resembled that of the gendarmes, but the coat and belts were ornamented with both gold and silver lace, the cockade was white and the vest buff, the horse furniture was scarlet and gold; its quarters were also at the Palace of Versailles.

The first company of the Mousquetaires du Roi was that to which the immortal heroes of Dumas' romance belonged. Its officers always took precedence of the officers of the equal ranks belonging to the 2nd Company. It was composed of a captain-lieutenant, two sub-lieutenants, two ensigns, two cornets, ten *maréchaux-des-logis* (of whom two were aide-majors), a standard-bearer, a colour-bearer, and 200 rank and file, of whom four were brigadiers and eighteen sub-brigadiers, two of the latter acting as sous-aide-majors; there were also six drummers and four hautboy players. The musketeers served both on foot and on horseback; they were drilled and reviewed sometimes as a squadron, sometimes as a battalion. When they were formed in squadron, the standard was on the right of the colour, and *vice versa*. The uniform was scarlet throughout with gold lace, the plume in the hat was white; on mounted duties leather breeches and jack-boots were worn; on dismounted duties white stockings; a blue soubreveste or cassock was worn ornamented with a white cross, silver fleurs-de-lys, and red and silver rays. The horse furniture was scarlet, trimmed with gold. The horses of the company were all white or grey, whence they were called the Mousquetaires Gris. The company was quartered in the Faubourg St. Germain, in Paris.

The second company of mousquetaires was organised exactly like the first, and its uniform was the same, except that it had red stockings instead of white, and silver lace instead of gold, and the flames or rays embroidered on its blue cassock were yellow and silver instead of red and silver. This company is the "Cardinal's Musketeers" of Dumas'



romance. It was presented to the King by Cardinal Mazarin in 1660, when it was made the second company of Mousquetaires du Roi. It was mounted entirely on black horses, whence it was called the Mousquetaires Noirs.

The standards of both companies were white; that of the Grey Musketeers had on it the device of a bursting shell thrown from a mortar and falling on a town, with the motto "*Quo ruit est Lethum*," and that of the Black Musketeers a sheaf of twelve darts, with points downwards, with the motto "*Alterius Jovis altera Tela*," which was given to the second company by the King when he added it to the first. The hôtel or headquarters of the Mousquetaires Noirs was in the Faubourg St. Antoine.

The company of Grenadiers à Cheval was created in 1776 to serve as a grenadier company for the Maison du Roi. It had a captain-lieutenant, three lieutenants, three sub-lieutenants, three maréchaux-des-logis, six sergeants, three brigadiers, six sub-brigadiers, six lance-corporals, a standard-bearer, 124 grenadiers, and four drummers. It served both on foot and on horseback. The uniform was blue with scarlet facings and vest, and silver lace. The belts were white leather, and the pouches black leather, ornamented with three silver grenades. The head-dress was a bearskin cap, with a silver plate in front. The horse furniture was blue and silver. The headquarters of the company was at Vitry, near Paris.

The mounted troops of the Maison du Roi formed a *corps d'élite* in the Army, and acted as a reserve on the field of battle, where they were often brought up at a critical moment to decide the wavering fortunes of the day. They turned the tide of battle at Steenkirk and at Fontenoy, where they broke the ranks of the British infantry.

The two companies of musketeers, and the Grenadiers à Cheval, were disbanded by Louis XVI., from motives of economy, at the time of the attempted re-organisation of the French Army by Count St. Germain. The rest of the Maison du Roi was dissolved by the Revolution, and its soldiers joined the crowd of *émigrés*.

#### GARDES FRANÇAISES AND GARDES SUISSES.

These regiments were generally counted as belonging to the Maison du Roi, but only their officers were of noble birth. The rank and file were recruited from all classes of the population, like those of the Line regiments.

The regiment of the Gardes Françaises was raised by Charles IX. in 1563 under the title of the 10 Ensigns of the King's Guard. Each ensign was a company of 50 men; the composition of the regiment varied from time to time; in 1767 it comprised 6 battalions of 5 companies each and 3 companies of grenadiers. The strength of each company was 110 men. It had a colonel, lieutenant-colonel, and major, 5 battalion commanders, 8 aide-majors (one for each battalion and 2 supernumerary), and 8 sous-aide-majors. There was a captain and 4 subalterns to each company. The field officers and battalion com-

manders had the rank of general officers. The major of the regiment was styled major-general of the French infantry. The captains had the rank of colonels, the lieutenants of lieutenant-colonels, and the sub-lieutenants and ensigns ranked as captains. The regiment had a band of music of 4 bassoons, 4 horns, 4 hautboys, and 4 clarionets. Bands of military music were then generally confined to regiments of guards, and usually consisted only of 16 musicians. Regiments of the Line had no music but their drums and fifes. Four companies of the Gardes Françaises mounted guard every Sunday in the outer court of the Palace where the King was residing, and remained on duty there for the week.

The uniform of the Gardes Françaises was a royal-blue coat and kneebreeches, the facings and revers of the coat and the waistcoat were scarlet. The coat and vest were edged with silver lace or white braid, and the revers of the coat were braided with bars of the same. The hats were bordered with silver lace or white braid. The grenadiers wore fur caps. The Gardes Françaises took precedence of all other regiments of infantry. They generally took the field in case of war, and were engaged in most of the great battles of the French Army. At Dettingen they were routed by the English and driven into the river Saal, whence they were taunted with having "carpeted the Saal with blue cloth." At Fontenoy they were again overthrown by the English, and were succoured and avenged by the Gardes du Corps. In the Revolution they were the first troops to set the example of deserting their officers and their colours; many of their sergeants afterwards became officers in the Republican Army.

The Swiss Guards were formerly the Swiss Regiment of Gallatz, which was made into a corps of guards by Louis XIII. In 1767 it was composed of 4 battalions, each one comprising 4 companies, of which 1 was of grenadiers and 3 of fusiliers. The regimental staff consisted of a colonel and lieutenant-colonel, each owning a company, a major, 4 aide-majors, 4 sous-aide-majors, and 4 standard-bearers (2 for each battalion), a quartermaster and assistant-quartermaster, a judge-advocate, 3 chaplains, a physician, 4 surgeons, and 8 surgeon-apprentices, a sergeant-major, a drum-major, an auditor-general, a secretary-interpreter, a commissary of rations, and 4 provosts (2 for each battalion).

The first fusilier company of the 1st Battalion was called the General's Company. It was owned by the colonel-general of the Swiss and Grisons, who was a general staff officer commanding all the Swiss troops in the service of France. The General's Company had a staff consisting of a judge-advocate, chaplain, secretary-interpreter, physician, sergeant-general, drum-major, quartermaster, sergeant-major, 16 musicians, and a provost. This company was always kept at a strength of 200 rank and file.

Each company of grenadiers consisted of a captain, a first and second lieutenant, and a sub-lieutenant, 2 sergeants, a quartermaster-sergeant, 4 corporals, 4 lance-corporals, 40 grenadiers, and a drummer. It was divided into 4 squads of 12 men each.

Each company of fusiliers was composed of a captain, 2 lieutenants

and 2 sub-lieutenants, 6 sergeants, 2 quartermaster-sergeants, 12 corporals, 12 lance-corporals, 132 fusiliers, and 6 drummers, divided into 12 squads of 13 men each, including a corporal and lance-corporal.

The officers of the Swiss Guards held superior Army rank like those of the Gardes Françaises; the regiment ranked next to the Gardes Françaises, but when they were not together it yielded precedence to the senior French regiment which happened to be present, and took rank above all others. Every Sunday 2 companies mounted guard over the royal residence.

The uniform of the Swiss Guards was scarlet with silver lace and blue facings similar in pattern to that of the Gardes Françaises. The waistcoat, kneebreeches, and gaiters were white.

The names of officers below the rank of captain in the Gardes Françaises and the Gardes Suisses are not given in the *État Militaire*.

The regiment of Swiss Guards was destroyed in gallantly defending the Palace of the Tuileries against the overwhelming numbers of the revolutionary mob on the 10th August, 1792.

#### CAVALRY.

At the head of the cavalry was a colonel-general, with a staff consisting of a mestre-de-camp-général, a commissary-general, a maréchal-général-des-logis, a secretary-general, a provost-general, a provost-lieutenant, 2 almoners, 2 chaplains, 2 physicians, 2 surgeons, 12 orderlies, and an executioner.

The colonels of cavalry regiments continued to be called by the ancient title of mestre-de-camp up to the time of the Revolution, though it had been replaced by that of colonel in the infantry regiments in 1730.

*List of Regiments of Cavalry according to precedence.*

No.	Title of Regiment.	Uniform	Facings.	Lace and Buttons.	Date of Formation.
1	Colonel-Général ...	Blue	Crimson Velvet	Gold	1635
2	Mestre-de-camp-Général ...	Blue	Black Velvet	Gold	1635
3	Commissary-General ...	Blue	Black Velvet	Gold	1635
4	Royal ...	Blue	Red	Silver	—
5	Du Roi ...	Blue	Red	Silver	1635
6	Royal Étranger ...	Blue	Red	Silver	1636
7	Cuirassiers du Roi ...	Blue	Red	Silver	1666
8	Royal Cravattes ...	Blue	Red	Silver	1664
9	Royal Roussillon ...	Blue	Yellow	Silver	1667
10	Royal Piedmont ...	Blue	Lemon Yellow	Silver	1670
11	Royal Allemand ...	Blue	Red	Silver	1671
12	Royal Prologue ...	Blue	Red	Silver	1672
13	Royal Lorraine ...	Blue	Orange	Silver	1672
14	Royal Picardie ...	Blue	Buff	Silver	1672
15	Royal Champagne ...	Blue	Lemon Yellow	Silver	1682

*List of Regiments of Cavalry according to precedence—continued.*

No.	Title of Regiment.	Uniform	Facings.	Lace and Buttons.	Date of Formation.
16	Royal Navarre ... ..	Blue	Orange	Silver	1672
17	Royal Normandie ... ..	Blue	Rose Coloured	Silver	1674
18	La Reine ... ..	Blue	Red	Silver	1635
19	Dauphin ... ..	Blue	Red	Silver	1658
20	Bourgogne ... ..	Blue	Red	Silver	1666
21	Berry ... ..	Blue	White	Silver	1673
22	Carabiniers de M. le Comte de Prusse ... ..	Blue	Red	Silver	1690
23	Régiment de M. le Comte d'Artois ... ..	Blue	White	Silver	1666
24	Orleans ... ..	Blue	Red	Silver	1690
25	Chartres ... ..	Blue	Red	Silver	1672
26	Condé ... ..	Blue	Drab	Silver	1666
27	Bourbon ... ..	Blue	Drab	Silver	1666
28	Clermont-Prince ... ..	Blue	Drab	Silver	1666
29	Conty ... ..	Blue	Drab	Silver	1666
30	Penthièvre ... ..	Blue	Lemon Yellow	Silver	1684
31	Noailles ... ..	Blue	Red	Silver	1688
32	Bercheny (Hussars) ... ..	Green	Crimson	Silver	1720
33	Chamborant (Hussars) ... ..	Green	Black	Silver	1734
34	Royal Nassau (Hussars) ... ..	Green	Orange	Silver	1756
35	Esterhazy (Hussars) ... ..	Green	White	Silver	1764

The regiments of cavalry were always called by their titles, and not by their numbers.

The regiment consisted of four squadrons, and each squadron was divided into two troops (*compagnies*). The regimental staff consisted of a *mestre-de-camp* (colonel), and a lieutenant-colonel (each of these officers had a troop in the regiment), a major, two aide-majors, two sous aide-majors, a quartermaster (who also performed the duties of paymaster), and four standard-bearers. Chaplains and surgeons were only appointed to the regiment when it was placed on a war footing. The regiments of the *Mestre-de-camp-Général*, the Commissary-General, and the Royal Allemand, had, in addition to the above, a *Mestre-de-camp-Commandant* without a troop in the regiment.

Each troop of horse was officered by a captain, a lieutenant, and a sub-lieutenant, and consisted of 4 *maréchaux-des-logis* (sergeants), 1 *fourrier* (quartermaster-sergeant), 8 brigadiers (corporals), 8 carbineers, 31 troopers, and 1 trumpeter. It was divided into 8 squads of 6 men each, including a brigadier and a carbineer.

The 22nd Regiment Carbineers had a special organisation. In the 17th century each regiment of horse had one troop of carbineers. Louis XIV. assembled all these troops into one regiment. In 1767 this regiment consisted of 5 brigades, of 2 squadrons, of 3 troops each, or 30 troops in all. Besides the regimental staff, each brigade had a staff like that of a regiment. The senior officer of each brigade was a *mestre-de camp lieutenant*.

In the regiments of hussars, the troop on a peace footing mustered, besides its 3 officers, only 1 *maréchal-des-logis*, 1 *fourrier*, 2 *brigadiers*, 20 hussars, and a trumpeter.

All the cavalry who were not carbineers were armed with swords and pistols; the hussars had sabres and pistols. The 7th Regiment was the only one that wore the cuirass. The accoutrements of most of the regiments were buff leather.

There was a great variety in the uniforms of all the regiments: in the cut of the collars and cuffs, and the arrangement and colour of the braid with which the hats, button-holes, etc., were trimmed. Some regiments wore waistcoats of the same colour as their facings. The buttons bore the number of the regiment; buff leather breeches and jack-boots were worn on mounted duties. The pattern and colour of the horse furniture varied in all the regiments, the colour being blue in most of them, but scarlet, buff, or drab in others to match the facings. The shabracque was trimmed with a broad band of a contrasting colour, trimmed with two or more rows of coloured lace, and the corners had embroidered devices of fleur-de-lys, stars formed of spurs, etc., in cloths of different colours.

The hussars wore shakos of black felt, garnished with cloth of the colour of the regimental facings, and trimmed with white braid, braided jackets and pelisses, red pantaloons, and hessian boots, and red sabretaches trimmed with white braid. Their shabracques were red cloth, except in the Régiment Esterhazy, in which it was black lambskin.

*List of Regiments of Dragoons according to Precedence.*

No.	Title of Regiment.	Uniform.	Facings.	Lace and Buttons.	Date of Formation
1	Colonel-Général ...	Green	{ Crimson }	Gold	1668
2	Mestre-de-camp-Général ...	Green	{ Red }	Gold	1674
3	Royal ...	Green	Red	Silver	1658
4	Du Roi ...	Green	Rose	Silver	1744
5	La Reine ...	Green	Red	Silver	1673
6	Dauphin ...	Green	Violet	Silver	1673
7	Orléans ...	Green	Red	Silver	1718
8	Beaupemont ...	Green	Buff	Silver	1693
9	Custine ...	Green	{ Lemon }	Silver	1673
10	D'Autichamp ...	Green	{ Yellow }	Silver	1674
11	Chabot ...	Green	Rose	Silver	1674
12	Damas ...	Green	Buff	Silver	1674
13	Lanan ...	Green	Black	Silver	1674
14	Belsunce ...	Green	Orange	Silver	1674
15	Montecler ...	Green	Buff	Silver	1676
16	Languedoc ...	Green	Orange	Silver	1676
17	Schomberg ...	Green	Buff	Silver	1676
			Red	Silver	1741



The first seven regiments of dragoons always preserved the same title, like the regiments of cavalry and infantry; but the remainder were known by the names of their colonels. Each regiment consisted of 4 squadrons of 2 troops each. The regimental staff was a mestre-de-camp, lieutenant-colonel, major, 2 aide-majors, 2 sous-aide-majors, a quartermaster, and 2 guidon-bearers. The regiments had only chaplains and surgeons on a war establishment. When the Army was assembled in camp or in the field the senior-major of dragoons present performed the duties of major-general (adjutant-general) of dragoons.

A troop of dragoons comprised 4 maréchaux-des-logis, 1 fourrier, 8 brigadiers, 8 lance-corporals, 24 dragoons, and a drummer. Of these 46 men 30 were mounted, 16 on foot. The troop was commanded by a captain with a lieutenant and a sub-lieutenant, and was divided into 8 squads of 5 men each, including a brigadier and a lance-corporal.

The dragoons were armed with muskets, bayonets, and sabres; and served both on foot and on horseback. They wore helmets of burnished copper, waistcoats of buff cloth, breeches of buff leather, and half-boots. The horse furniture was of green cloth in most regiments, of scarlet cloth, or of black or white lambskin, in others, trimmed with braid, the pattern and colour of which varied in all the regiments.

#### THE ROYAL CORPS OF ARTILLERY.

This corps was numbered 47 in the regiments of the Line. It was divided into 7 regiments, called respectively by the local titles of Latere, Besançon, Strasburg, Metz, Toul, Auxonne, and Grenoble. Each regiment was divided into 5 brigades of 4 companies each. Four of the brigades were of sappers and gunners, and the fifth brigade of bombardiers.

The 1st and 3rd Brigades had each a company of sappers, and 3 companies of gunners; the 2nd and 4th Brigades had 4 companies of gunners. There were thus 20 companies in each regiment—2 of sappers, 4 of bombardiers, and 14 of gunners. There was also a company of artificers attached to each regiment. There was no distinction between artillery and engineer officers, who were all included in the same cadres, nor between field and fortress artillery. There was no horse artillery.

The staff of each regiment comprised a colonel, a lieutenant-colonel, 5 chiefs of brigade with the rank of major, an aide-major, and 2 sous-aide-majors. Only the names of these officers are given in the *État Militaire*; the names of the captains of artillery are not given. There is a notable absence of titles among the officers of the artillery corps in comparison with the other branches of the Service.

Neither the date of formation nor the uniform of the Royal Corps of Artillery is given in the *État Militaire*.

*Regiments of Infantry of the Line according to Precedence.*

No.	Title of Regiment.	Uniform.	Facings.	Lace and Facings.	Date of Formation.
1	Picardie ...	White	Blue Piping	Gold	1563
2	Piémont ...	White	Black Velvet	Gold	1563
3	Champagne ...	White	Blue Piping	Gold	1563
4	Navarre ...	White	Sky Blue	Silver	1563
5	Normandie ...	White	Black Velvet	Silver	1615
6	La Marine ...	White	Black Velvet	Gold	1635
7	Auvergne ...	Grey	Violet	Silver	—
8	Bourbonnais ...	White	White	Gold	—
9	Béarn ...	Grey	Scarlet	Gold	1595
10	Flandre ...	White	Violet	Gold	1597
11	Guyenne ...	White	Red	Gold	1610
12	Du Roi ...	Grey	Blue	Gold	1662
13	Royal ...	White	Blue	Silver	1636
14	Poitou ...	White	Blue	Gold	1616
15	Lyonnais ...	White	Red	Gold	1660
16	Dauphin ...	White	Blue	Gold	1667
17	Aunis ...	White	Red	Silver	1610
18	Touraine ...	White	Blue	Silver	1625
19	Aquitaine ...	White	Blue	Gold	1604
20	D'Eu ...	White	Blue	Gold	1604
21	Dauphiné ...	White	Crimson	Gold	1629
22	Île de France ...	White	Red	Gold	1640
23	Soissonnais ...	White	Red	Silver	1595
24	La Reine ...	White	Red	Silver	1661
25	Limousin ...	White	Red	Gold	1622
26	Royal-Vaisseaux ...	White	Blue	Gold	1635
27	Orleans ...	Red	Red	Gold	1645
28	La Couronne ...	White	Blue	Silver	1643
29	Bretagne ...	White	Black	Gold	1644
30	Lorraine ...	—	—	—	—
31	Artois ...	White	Blue	Silver	1610
32	Berry ...	White	Crimson	Gold	1637
33	Hainault ...	White	Crimson	Silver	1651
34	La Sarre ...	White	Blue	Gold	1651
35	La Fère ...	White	Red	Silver	1651
36	Alsace (Germany) ...	Blue	Red	Silver	1634
37	Royal-Roussillon ...	White	Green	Gold	1655
38	Condé ...	White	Red	Gold	1661
39	Bourbon ...	White	Red	Silver	1667
40	Grenadiers de France ...	Blue	Lemon Yellow	Silver	1749
41	Beauvoisis ...	White	Green	Silver	1667
42	Rouergue ...	White	Green	Gold	1667
43	Bourgogne ...	White	Green	Gold	1668
44	Royal Marine ...	White	Green	Silver	1669
45	Vermandois ...	White	Green	Gold	1670
46	Anhalt (German) ...	Blue	Yellow	Silver	1670
47	Royal Corps of Artillery ...	Blue	—	—	—
48	Royal-Italien ...	White	Sky-Blue	Gold	1671
49	Erlach (Swiss) ...	Red	Black Velvet	Silver	1671
50	Boccard (Swiss) ...	Red	Lemon Yellow	Silver	1672
51	Pfyffer (Swiss) ...	Red	Sky-Blue	Silver	1672
52	Castella (Swiss) ...	Red	Blue	Silver	1672
53	Languedoc ...	White	Green	Silver	1672
54	Beauce ...	White	Green	Gold	1673
55	Walduer (Swiss) ...	Red	White	Silver	1673
56	Medoc ...	White	Green	Silver	1674
57	Divarais ...	White	Green	Gold	1674

No.	Title of Regiment.	Uniform.	Facings.	Lace and Facings.	Date of Formation.
58	Vexin ... ..	White	Green	Gold	1674
59	Royal-Comtois ... ..	White	Green	Silver	1674
60	Lamballe, ci-devant Beau- jolais ... ..	White	Blue	Gold	1674
61	Provence ... ..	White	Green	Silver	1674
62	Jenner (Swiss) ... ..	Red	Yellow	Silver	1677
63	La Marck (German) ... ..	Blue	Yellow	Silver	1680
64	Penthièvre ... ..	White	Blue	Silver	1684
65	Boulonnais ... ..	White	Green	Silver	1684
66	Angoumois ... ..	White	Green	Silver	1684
67	Perigord ... ..	White	Green	Silver	1684
68	Saintonge ... ..	White	Green	Silver	1684
69	Forez ... ..	White	Green	Silver	1684
70	Cambrésis ... ..	White	Green	Silver	1684
71	Tournaisi ... ..	White	Green	Silver	1684
72	Foix ... ..	White	Green	Silver	1684
73	Quercy ... ..	White	Green	Silver	1684
74	La Marche-Prince ... ..	White	Violet	Gold	1684
75	Diesbach (Swiss)... ..	Red	Sky-Blue	Silver	1689
76	Courten (Swiss) ... ..	Red	Royal-Blue	Silver	1689
77	Bulkeley (Irish) ... ..	Crimson	Green	Silver	1690
78	Clare (Irish) ... ..	Crimson	Yellow	Silver	1690
79	Dillon (Irish) ... ..	Crimson	Black	Gold	1689
80	Royal-Swedish (German)	Blue	Buff	Gold	1690
81	Chartres ... ..	White	Red	Silver	1691
82	Conty ... ..	White	Blue	Gold	1692
83	Ross-common (Irish) ... ..	Crimson	White	Gold	1697
84	Berwick (Irish) ... ..	Crimson	Black	Silver	1698
85	Enghien ... ..	White	Red	Silver	1706
86	Royal-Bavarian (German)	Blue	Black	Silver	1709
87	Salis (Grison) ... ..	Red	Blue	Silver	1734
88	Royal-Corsican ... ..	Blue	Yellow	Silver	1739
88	Nassau (German) ... ..	Royal Blue	Red	Silver	1745
89	Lochmann (Swiss) ... ..	Red	Blue	Silver	1752
90	Bouillon ... ..	White	Black	Silver	1757
91	Royal deux Ponts (Ger- man) ... ..	Sky-Blue	Lemon Yellow	Silver	1757
92	Eptingen (Swiss)... ..	Red	White	Silver	1758

The dates of formation of Regiment No. 7 Auvergne, No. 8 Bourbonnais, No. 30 Lorraine, and No. 47 Royal Corps of Artillery, and the uniforms of Lorraine and Royal Artillery are not entered in the *État Militaire*.

The titles of the French regiments in the above list are mostly territorial and permanent. The German, and some other foreign regiments also, always retained the same names, but the Swiss and Irish Regiments were known by the names of their proprietary colonels at the time.

There were 11 Swiss regiments, 7 German, and 5 Irish in the French line. The numbers of the regiments were borne on the buttons in all the corps of infantry as well as in the cavalry and dragoons. The numbers appear to have been liable to change as the consecutive order of the regiments might be altered from time to time by augmentations or reductions. In the above list there are two regiments numbered 88; this is owing to the Royal Corsican, which had been incorporated in the Royal Italian, being

again made into a separate regiment and given its old position in the Line, and its old number, which had been appropriated by another regiment. The regiments numbered from 1 to 19 had 4 battalions; the French regiments from No. 20 to No. 65 were of two battalions; most of the remaining French regiments had but one battalion. The Swiss and German regiments were each of two battalions, the Irish regiments had one battalion. Each battalion had nine companies—eight of fusiliers and one of grenadiers.

The regimental staff was a colonel and a lieutenant-colonel, each with a company in the regiment; a major (who had no company), a quartermaster (who also performed the functions of paymaster), a chaplain, a surgeon, and a drum-major.

Each battalion had as staff an aide-major, a sous-aide-major, and two ensigns. The officers of each company were a captain, lieutenant, and sub-lieutenant.

The company of grenadiers had 2 sergeants, 1 quartermaster-sergeant, 4 corporals, 4 lance-corporals, 40 grenadiers and a drummer, divided into 4 squads or 12 rank and file each. Each company of fusiliers had 4 sergeants, 1 quartermaster-sergeant, 8 corporals, 8 lance-corporals, 40 fusiliers, and 2 drummers, divided into 8 squads of 7 rank and file each; the battalion thus numbered nearly 600 of all ranks.

The officers of the grenadier companies were chosen by the colonel from the whole body of officers of the regiment, and they recruited their companies by choosing the best and smartest non-commissioned officers and men from the battalion companies. The sergeants and rank and file of the grenadiers received a higher rate of pay than the fusiliers.

In 27 regiments of the French Army the proprietary colonel had the exclusive right of nominating and promoting the officers. In the other regiments promotions to the rank of captain and field officer were made by the war office, generally on the recommendation of the colonel. There was a system of purchase much resembling that lately abolished in the British Army, and birth and money were the only passports to promotion. Deserving sergeants were sometimes promoted to the rank of ensign, but never to any higher rank.

The dress of the regiments was not so uniform as it is at present; the waistcoats and kneebreeches were generally white, but were blue in some regiments. The arrangement of the lace and braid on the button-holes and pocket-flaps and the cut of the collars and cuffs varied in all the regiments. These were matters which were generally decided by the taste of the proprietary colonel. The officers' hats were bound with gold or silver lace and the men's with yellow or white braid. The grenadiers had fur caps, except in the German regiments, in which they wore a mitre-shaped cap with a front of white metal, as in the Prussian Service. White cockades were worn throughout the Army, except in some special corps. The accoutrements were buff leather, pipe-clayed, and the pouches black leather. Long gaiters or spatterdashes were worn—of black cloth in winter, and white linen in summer.

The Regiment of Grenadiers of France, No. 40, had a special organisation. When a number of battalions were broken up in 1749, after the peace of Aix-la-Chapelle, their grenadier companies were kept on foot and formed into this corps. It was divided into 4 brigades of 12 companies each; the company mustered 50 of all ranks. The regiment wore bearskin caps bearing the royal arms on a front-plate of white metal.

Officers of battalion companies were armed with spontoon or half pikes, sergeants with halberds. The officers and sergeants of grenadiers had fusils and bayonets, and sabres instead of swords. All grenadiers and all non-commissioned officers of battalion companies were armed with a sabre in addition to their other arms.

The Régiment du Roi, No. 12, had an extra establishment of subaltern officers, and its field officers and seven senior captains drew extra allowances. The uniform was a coat of a pearl-grey colour with blue facings, waistcoat, and breeches; the facings and the vest were trimmed and braided with orange-coloured lace.

The Swiss regiments in the French Army were furnished by the Confederation or by the Cantons on hire for a specified term of years on "Capitulations which were renewed from time to time with the French Government." They received a higher rate of pay than the French troops, and were governed by their own military code, which differed in many respects from the French. They ranked below the Swiss French Regiment in camp or garrison, but according to their number with all other regiments. Under Louis XIV. there were at one time as many as 40,000 Swiss soldiers serving with the French Army.

The Irish regiments were the remains of the famous Irish brigades which had been raised for the service of James the Second, and had been transported to France after the capitulation of Limerick. The numbers of the regiments and their establishments had become greatly reduced, owing to the difficulty of obtaining recruits from Ireland. The smugglers who carried silks and claret and brandy from Nantes to the Irish coast brought back every autumn the swarms of "wild geese" who sought a refuge from English tyranny and Protestant ascendancy under the banner of the House of Bourbon.

*Legions of Light Troops.*

No.	Title of Regiment.	Uniform.	Facings.	Lace and Buttons.	Date of Formation
1	Légion Royale ...	Blue	Red	Silver	1745
2	Légion de Flandres ...	Sky-Blue	White	Silver	1749
3	Légion de Hainault ...	Royal Blue	Black Velvet	Silver	1749
4	Légion de Conflans ...	Green	Green	Gold	1749
5	Légion de Condé ...	Drab	Drab	Silver	1758
6	Légion de Soubise ..	Blue	White	Silver	1761



These legions of light troops were raised to oppose the hussars and pandours of Maria Theresa in the war of the Austrian succession. Each legion was composed of horse and foot, like our regiment of Guides in the Indian Army. It had 17 companies: 8 of dragoons, 8 of fusiliers, and 1 of grenadiers. On a peace footing each company mustered from 20 to 25 men, and the legion 400 of all ranks. The regimental staff of each legion was a colonel, a colonel-commandant, a lieutenant-colonel, a major, an aide-major for the dragoons and another for the infantry.

The legions had neither guidon, colour, nor kettledrum.

The policy of the French war office was to keep a number of small cadres on foot with weak establishments in time of peace, so that on war breaking out the Army might be rapidly raised from a peace to a war footing by the simple process of filling up the existing cadres without having to create new ones.

#### GENDARMERIE OF FRANCE.

This force was the lineal descendant of the old knights and men-at-arms who formed the strength of the armies of mediæval Europe.

It appears to have resembled our own Yeomanry, being composed of the nobility and gentry of a province not serving in the Regular Army. The names of its non-commissioned officers are given in the *État Militaire* as in the case of the Maison du Roi. The corps had a general staff, consisting of a major-inspector, a major-en-second, 2 aide-majors, 4 sous-aide-majors, and 2 quartermasters. There were 10 companies called, respectively, the Gendarmes Écossais, Anglais, Bourguignons, De Flandres, de la Reine, Dauphin, De Berry, De Provence, D'Artois, and D'Orleans. Each company had a captain-lieutenant, a sub-lieutenant, an ensign, and a guidon as officers; 6 maréchaux-des-logis, 3 brigadiers, 3 sub-brigadiers, 3 fourriers, and a standard-bearer as non-commissioned officers; 96 gendarmes, of whom 12 were lance-corporals and 3 trumpeters.

The Scotch company was raised in 1445, along with the Scotch company of the Gardes du Corps, from the Scotch men-at-arms, whom Archibald, Earl of Douglas, brought to aid the French king against the English. After Douglas had been killed at Verneuil, the Dauphin, afterwards Charles VII., took his men into his own service and formed these two companies of them. They were recruited by Scotsmen until the supply failed owing to the union of Scotland with England. The titular captain of the Scottish company of gendarmes continued to be held by a member of the Royal Family of Stuart down to the middle of the seventeenth century.

The gendarmerie wore a scarlet cloak, buff waistcoats, buff leather breeches, and jack-boots. The hats and coats were trimmed with silver, the horse furniture was scarlet trimmed with silver and ornamented with the royal cipher in silver embroidery.

The 34 companies of the maréchaussées were attached to the corps of gendarmerie, and performed the duty of police in the provinces, and

this is how the name of gendarmerie, which at first signified men-at-arms only, has come to be applied to a police force. The men of the *maréchaussées* were called archers—a name which had descended from ancient times, when they had been armed with a bow. The companies varied in strength according to the locality, some of them nearly reaching 200, others not exceeding 30. They were commanded by provosts-general and officered by lieutenants. The non-commissioned officers were exempts, brigadiers, and sub-brigadiers, and there was a trumpeter to each company. The uniform was blue, the facings, vest, and breeches were scarlet, and the lace silver. Only the Lorraine company wore a coat of yellow cloth with facings of black velvet for the officers, black plush for the men.

There were 31 battalions of recruits, which served as *depôts* for the Army and training-schools for the soldiers. They had permanent stations, scattered throughout the provinces, the battalion headquarters being generally at a large garrison town. The staff of each battalion was a commandant, an aide-major, with the rank of captain, a *sous-aide-major*, with the rank of lieutenant, and a surgeon.

The uniform was white throughout; the officers had the lapels of their coats faced with orange, and had silver lace and silver gorgets and epaulettes. The drummers wore the royal livery.

There was no military train or permanent transport department; civilian transport was hired or impressed by the *commissaires des guerres* as the exigencies of the Service required.

The *Hôtel Royal des Invalides*, at Paris (the French *Chel-ea Hospital*) numbered on its rolls nearly 4,000 pensioned officers and soldiers. Its staff consisted of a governor-commandant, a lieutenant du roi, a major, 2 aides-major, a commissary and provost-general, with 2 exempts under his orders, a director and intendant of the *Hôtel*, an inspector and controller-general, and a secretary-general and guardian of the archives—11 officials in all. The invalids were placed in three classes. Those who were still fit for light duty were formed in veteran companies for the garrison of the fortresses in the neighbourhood of Paris, the service of guards and orderlies at the office of the Ministry of War, etc.

The old French Army organisation was entirely destroyed at the time of the Revolution; the Republican leaders, in their blind hatred of everything appertaining to the *ancien régime*, doing their utmost to obliterate and efface all the old regimental titles, traditions, customs and distinctions. All the infantry were reformed in demi-brigades, with new numbers, titles, and uniforms; but cavalry could not be so easily improvised, and the ardent reformers were perforce obliged to leave most of the old cavalry regiments intact, and to be content with altering their numbers and designations. Hence many of the old regiments were to be found under new appellations, earning fresh distinctions on the battle-fields of the Republic and the Empire. But after Napoleon's final overthrow at Waterloo his whole Army was dissolved and disbanded, and these regiments, too, disappeared. Not a single corps of the present French Army

has had a corporate existence for a longer period than eighty years; though by a pardonable fiction its regiments are allowed to parade as their battle honours the distinctions won by their predecessors in La Grande Armée under the same numerical title.

"It was neither the conscripts nor the volunteers," said Napoleon, "who saved the Republic in 1793; it was the 150,000 old soldiers of the Monarchy, who, after the emigration of their officers and the dissolution of their regiments, were drafted into the Republican Armies. Some of the conscripts and volunteers deserted, some died; some remained, who in process of time made excellent soldiers. You will not soon catch me going to war with an Army of recruits."

But the loss of his veteran Army in the snows of Russia forced him to belie his own words, and to enter on the campaign of 1813 with an Army of immature striplings, who, in spite of their gallantry, were overthrown by the sheer physical force of the seasoned Prussian soldiers on the fields of Kulm and the Katzbach.

## SOLDIERING IN THE WEST INDIES IN THE DAYS OF QUEEN ANNE.

By CHARLES DALTON, Esq.,

*Editor of "English Army Lists and Commission Registers, 1661-1714."*

ON May 4th, 1702, the British tocsin of war rang out loud and clear, bringing joy and hope to the officers on the full-pay list in general, and to the half-pay officers in particular. The declaration of war with France and Spain necessitated a large increase to the Army, and it was an old-established custom when new regiments were to be raised that officers for the same should be drawn from the half-pay list. The war was a very popular one, and there was a universal desire in the Army to serve under Marlborough in Flanders, or in the projected expedition against Cadiz under the Duke of Ormonde. But this eagerness for active service did not show itself in the regiments told off for the West Indies. There was a strong feeling in the Army against the last-named service, and when the regiments of Erle (19th Foot), Hamilton (20th Foot), Donegal (35th Foot), and Charlemont (36th Foot), which had been constituted sea-going corps, were despatched with Captain Hovenden Walker's naval squadron from Cadiz on September 24th, 1702, for the West Indies, not one of the colonels commanding above regiments went with the expedition! Nothing can be adduced against the personal bravery of these officers. Major-General Erle had fought all through the Irish campaign, and had been twice taken prisoner and twice rescued by his men in the bloody battle of Aughrim; he had likewise left a bed of sickness to share in the battle of Landen, where he was wounded. Brigadier Gustavus Hamilton (the future Viscount Boyne) had led the stormers at Athlone, and was a leader of recognised merit and bravery. The Earl of Donegal met a hero's death in April, 1706, at the storming of Fort Monjuich, Barcelona. And Lord Charlemont, who likewise served at Barcelona, was acquitted by a board of general officers from all blame in the matter of the panic which seized the troops under his command at said siege, for which panic he had been unjustly blamed by the Earl of Peterborough. In addition to these four commanding officers, 1 lieutenant-colonel, 1 major, 8 captains, 2 lieutenants, 1 ensign, and 2 chaplains had obtained the Queen's leave to be absent from their

regiments upon their going to the West Indies.<sup>1</sup> The regiments of Brewer (12th Foot), Handasyde (22nd Foot), and Whetham (27th Inniskillings) had been despatched some months previously to Jamaica and the Leeward Islands. These corps were also under-officered on leaving home. One captain of Whetham's "was obliged to quit because his colonel would not give him three months' leave to settle some private affairs of moment."<sup>2</sup> A captain in Brewer's "had a law-suit depending when his regiment was ordered to the West Indies, and obtained leave to stay at home."<sup>3</sup> And an officer appointed to the command of an additional company in Handasyde's also found, when ordered out to Jamaica, "he was unfortunately involved in a law-suit on which his whole fortune, besides his commission, depended, and prayed to be transferred to another regiment."<sup>4</sup> As the exigencies of the Service required that the vacancies in the regiments serving in the West Indies should be kept filled up, it was decided to send out a number of half-pay officers on the Irish establishment who were to do duty there and be restored to the full-pay list according to seniority as regimental vacancies occurred. The idea was a very happy one, there being a large number of half-pay officers unprovided for in the new levies. That this Service scheme was not welcomed by the gentlemen in question is abundantly proved by the long list of half-pay officers who "refused," and were by the Queen's order deprived of their pay.<sup>5</sup> When we consider that an ensign's half-pay on the Irish list was only eighteen-pence *per diem*, and that this retaining fee was generally in arrear, the stopping of the same was about as farcical as George IV.'s endorsement to a petition complaining that a newly-appointed Knight of Windsor, on the lower foundation, had not paid his installation fees:—"Dock this d——d fellow's pay!" Some of the half-pay officers struck off the list in 1703 were not restored to pay until 1717, and then only by an order from the House of Commons.<sup>6</sup>

Soldiering in the West Indies at the time we write of was deservedly unpopular. Regiments sent out there were, by epidemics, climatic causes, want of proper accommodation, proper diet, proper medicines, and mere ordinary care on the part of those in power, reduced in a few years to mere handfuls of effective men. Here is a case in point:—The Barbados regiment, under Colonel Francis Russell (governor of the island), which left England five companies strong in 1694, in a short

<sup>1</sup> "List of the officers who had the Queen's leave to be absent from their regiments upon their going to the West Indies." Treasury Papers, 1702.

<sup>2</sup> "Memorial of Captain John Symonds praying for a commission in the new levies." War Office MS. dated 1706.

<sup>3</sup> "Memorial of Captain Joseph Wiseman praying a commission in the new levies." *Ibid.*

<sup>4</sup> "Memorial of Captain William Lyndall." *Ibid.*

<sup>5</sup> "A list of half-pay officers who were left out of the half-pay establishment the 29th January, 1702, by a representation made to Her Majesty of their refusing to serve in the West Indies, and are not reinstated." Treasury Papers, 1703.

<sup>6</sup> "Case of Major William Purefoy and others." Treasury Papers, Vol. CCIX. No. 30, 31st December, 1717.



three years of inactive service had dwindled to 100 effective men, who were, by a Royal Warrant, formed into an independent company.<sup>1</sup> *Glory is priceless to a soldier, but there was none forthcoming to him in the West Indies in the reign of William III.* Take, for instance, the combined naval and military expedition against Martinique in 1693, under Admiral Sir Francis Wheeler and Colonel John Foulkes. Nearly all the British troops in the West Indies, with local Militia from the various islands, and a strong naval force, were hurled against the French island of Martinique, and achieved nothing. Many valuable lives were lost in action with the French at the attack on Port St. Pierre, Martinique, but the epidemic which broke out soon after on board the fleet carried off officers and soldiers by hundreds. "Six sea-captains and 700 out of 2,000 seamen died from the spotted fever." Well might Sir F. Wheeler say in his journal regarding this ill-starred expedition:—"We have made but a bad hand, and it will doubtless make a noise in the world."<sup>2</sup>

Ten years after the above events we find a combined naval and military force engaged in an expedition against the French island of Guadeloupe. Colonel Christopher Codrington, captain-general of the Leeward Islands, commanded the military forces, which consisted of the regiments of Erle, Hamilton, Whetham, Donegal, and Charlemont (referred to previously), some local Militia, and a body of Marines from the fleet, which was commanded by Captain Hovenden Walker. The French were not taken unawares, and made a vigorous resistance when attacked successively at Les Petits Habitants, La Bayliffe (where our men marched up to the French entrenchments with their muskets shouldered, without firing a shot until they could lay the muzzles of their pieces upon the top of the enemy's breastworks), and Basse-Terre, which were stormed and carried.<sup>3</sup>

Some valuable lives were lost in these undertakings, and both Colonel Codrington and Colonel Whetham fell sick, and had to be taken on board the fleet, leaving the command on shore to Lieut.-Colonel Wills, of Charlemont's regiment, who was an able and experienced officer. The reduction of these French towns, and the burning of villages, stores, works, etc., did not lead to the reduction of the whole island. On May 7th, 1703, owing to sickness and want of provisions, the troops were re-embarked, and Captain Walker's fleet sailed for St. Kitts. The British had hardly left Guadeloupe before a relieving force of French troops arrived from Martinique. This abortive expedition cost the lives of 1 major, 2 captains, and 6 subalterns, killed; 2 colonels, 7 captains, and 9 lieutenants, wounded; 2 colonels, 4 lieutenants, and 3 ensigns died.

<sup>1</sup> Royal Warrant dated "Camp near Genap  $\frac{10}{20}$  June, 1697." Barbados Papers.

<sup>2</sup> Sir Francis Wheeler's "Journal of the Proceedings of the Fleet and Land Forces under Colonel John Foulkes in the West Indies, 30th March, 1693—18th May, 1693." Hist. MSS. Comm., 14th Report, Appx. Pt. II., pp. 516—528.

<sup>3</sup> For the expedition to Guadeloupe, see John Burchett's "History of the Most Remarkable Transactions at Sea." London, 1720; also the "London Gazette" for May 10th, 1703.

154 soldiers were killed; 211 wounded; 72 died; 59 deserted; and 12 were taken prisoners.<sup>1</sup>

Whilst Guadaloupe was being devastated by our soldiers, a squadron was on its way to the West Indies under the command of Vice-Admiral Graydon. Colonel Columbine's regiment (6th Foot) accompanied this fleet, being one of the six regiments constituted a sea-going corps in 1702. It is recorded of the Royal Warwickshire that they mutinied on the eve of embarkation, and a large proportion of the rank and file deserted *en masse*. It was given out that the men claimed more sea-pay than what had been allotted to them. Be this as it may, the deserters were brought back, and the regiment embarked at Tilbury on March 13th, 1703. Colonel Columbine<sup>2</sup> accompanied his regiment, but we are told that "most of Colonel Columbine's regiment having quitted their commands, new ones are put in, and will sail the first fair wind for Jamaica with 19 companies of Marines."<sup>3</sup> Graydon had orders to collect all the forces that were scattered throughout the plantations, and then attempt the capture of Placentia, driving the French out of the Newfoundland trade. The Admiral collected the shattered remnants of Erle's, Hamilton's, Donegal's, and Charlemont's regiments on board his fleet, and sailed in the middle of summer for Placentia, on which cruise we must leave him.

A grievous illness, which brought Colonel Codrington to the very edge of the grave,<sup>4</sup> induced him to resign his governorship of the Leeward Islands in the winter of 1703-4, and Brigadier Wm. Mathew, of the Coldstream Guards, was appointed captain-general in Codrington's place, and knighted by Queen Anne, March 23rd, 1704. Before parting from Codrington, the soldier and scholar, who had held a captain's commission in the 1st Foot Guards, it is only fair to say he did his best to reform some of the abuses which disgraced the routine of military life in the West Indies early in the last century. Take, for example, the prevalent and crying abuse of "false musters." There was an independent company quartered in the Island of St. Kitts, of which the lieut.-governor, Colonel Jas. Norton, was captain. This company had been placed on the establishment from March 25th, 1699, and was mustered as complete at the close of 1700. In January, 1701, Colonel Codrington paid a visit to St. Kitts, and ordered Colonel Norton to parade his men. He found "about 25 miserable, old, decrepit fellows in rags, not able to stand under their arms."<sup>5</sup> Some of these veterans had joined the Army 30 years previously, and had long been superannuated; whilst others had never done duty at all, but were plantation servants<sup>6</sup> who evinced a

<sup>1</sup> Burchett's account.

<sup>2</sup> Colonel Ventris Columbine died at sea in 1703.

<sup>3</sup> Narcissus Luttrell's "Short Relation of State Affairs," Vol. V., p. 263.

<sup>4</sup> A letter from Colonel Codrington to the Lord High Treasurer, dated "Antigo (Antigua), August 13th, 1703, says:—"I am just rising from the grave and can scarce yet be reckoned among the living." Treasury Papers. Vol. LXXXVII. No. 28.

<sup>5</sup> Colonel Codrington to Secretary Lowndes, dated from "Antigua, January 31st, 1701." Treasury Papers, Vol. LIII. No. 31.

<sup>6</sup> *Ibid.*

commendable zeal for their masters' service by shouldering muskets on muster-days and cheerfully answering to the names of soldiers whose bones were either bleaching at the bottom of the Caribbean Sea or enriching West Indian soil. It is hardly necessary to add that Colonel Norton was deprived of his posts for "illegal practices."<sup>1</sup>

Sir Wm. Mathew had not enjoyed the governorship of the Leeward Islands above eight months when he succumbed to an attack of fever, December 4th, 1704. Pending the appointment of his successor, Colonel John Johnson, lieutenant-governor of Nevis, major in Colonel Whetham's regiment, and a colonel in the local Militia, was sworn in as captain-general of the Leeward Islands. Johnson appears to have been an honourable and good man, but he met with considerable obstruction from various unruly members of the Council, who "despised dominion and spoke evil of dignities." If we may judge from the two following instances, men of tarnished reputation in England found good berths awaiting them in the West Indies. Colonel John Ward, a member of the Nevis Assembly at this period, had been cashiered from the lieutenant-colonelcy of Saunderson's regiment in July, 1697, for "speaking things not for His Majesty's Service."<sup>2</sup> And when Colonel Edward Fox, a local lieutenant-general in the Leeward Islands and colonel of a regiment of foot, personally represented to the Nevis Assembly, in April, 1700, that he had the King's instructions for quartering his regiment on the island, the disloyal Ward again "spoke things not for His Majesty's Service," for which Colonel Fox openly "corrected" him in the presence of the assembled Council. Captain Matthew Smith, who had been arrested in the late reign for publishing libels against the Duke of Shrewsbury, Principal Secretary of State, was, in 1703, preferred to the high post of Judge-Advocate-General in Jamaica.<sup>3</sup>

On April 25th, 1706, the Queen appointed Colonel Daniel Parke governor and captain-general of the Leeward Islands, and he took up the reins of government on July 14th the same year. Parke was son of a Virginian planter, and had served at Blenheim as one of Marlborough's aides-de-camp. The Duke had honoured Parke by making him the bearer of the Blenheim despatches, and as the herald of victory Parke had been most graciously received by Queen Anne and her Court. He was a very handsome and powerful man, with great force of character. A few weeks after the new governor's arrival, Colonel Johnson, the governor of Nevis, was killed by Captain John Pogson, a member of the Council. It appears that Pogson had been a stumbling-block to Johnson when the latter was acting as captain-general, and they were on bad terms. On the day of his death Johnson was presiding at some public meeting, when Pogson happened to enter the room, and the former remarked in a loud voice:—"Here comes Alexander the coppersmith, who did me

<sup>1</sup> "Board of Trade Papers for the Leeward Islands."

<sup>2</sup> Letter from Colonel Edward Fox to the Board of Trade, dated from "Nevis, May 1st, 1700."

<sup>3</sup> Luttrell, Vol. V., p. 328.

much evil." Pogson replied in a sneering tone:—"You can hardly liken yourself to St. Paul," and presently left the room outwardly calm, but with murder in his heart. A few hours afterwards these two met in the open, and without giving the colonel time to defend himself Pogson shot him dead.<sup>1</sup> For this base act Captain Pogson was tried for murder at St. Kitts, October 14th, 1706, but was acquitted by the jury. He was, however, turned out of all his employments by Queen Anne's command in April, 1707.

In August, 1706, the ten companies of Colonel Whetham's regiment in the Leeward Islands consisted of 328 men, "including sergeants, corporals, drummers, and men sick and well."<sup>2</sup> This regiment was now ordered home, and Colonel Luke Lillingston's regiment (38th Foot) was ordered from Ireland to relieve Whetham's corps in the West Indies. Lillingston's arrived in the Leeward Islands in the spring of 1707; but the colonel, major, and many of the officers, stayed at home. The regiment was also much below its strength. The war with France was now at its height, and it was generally expected that the French would make some sudden descent on the least-protected of the Leeward Islands, so that it behoved Colonel Parke to have an eye to defence. He wrote letter after letter to the Honourable Board of Trade on the state of Lillingston's regiment, which Parke described as follows:—

"Lillingston's regiment will hardly be of use except they  
 "are paid, armed, and clothed; and whilst the colonel, major,  
 "and a great number of officers are at home it never will be.  
 "Major Aldy has not been yet here, who ought never to be from  
 "the regiment. The colonel agrees with merchants to pay the  
 "regiment; they make use of the money and take no care to  
 "pay the regiment. The money ought to be sent by the packet  
 "every month. Here is one company has no officers to it, and  
 "several with but one. Colonel Jones, the lieutenant-colonel, has  
 "downright quarreled with me because I would not give him  
 "leave to go home, and so have several others. I have given  
 "leave to but two ensigns and a lieutenant. One had the  
 "leprosy, the other very ill, and the third was good for nothing.  
 "Colonel Jones tells me he has got leave from home, which will  
 "come by the next packet. I suppose in five or six months  
 "most of the rest will have leave to go home if your Lordships  
 "do not prevent."<sup>3</sup>

An earlier letter from Colonel Parke describes the class of recruits

<sup>1</sup> Account of the murder of Colonel Johnson, in "Board of Trade Papers for the Leeward Islands," Vol. X.; also Colonel Whetham's "Memorial on behalf of Mary Johnson, widow of Major John Johnson, late governor of Nevis, barbarously murdered in the execution of his duty." Treasury Papers, Vol. CI. No. 73, March 25th, 1707.

<sup>2</sup> Order signed at "Kensington, April 17th, 1707."

<sup>3</sup> "Board of Trade Papers for the Leeward Islands," Vol. IX.

<sup>4</sup> Letter dated from "St. Christopher's, 1st July, 1708."

sent out to the West Indies by Colonel Lillingston and the absentee officers:—

“The recruits sent over are either old men, or boys fit for nothing. Some are so bad that the officers discharged them, being ashamed to keep such men. Being unfit for labour they are begging.”

As Colonel Lillingston, who had lately been made a brigadier-general, showed no disposition to join his regiment, Colonel Parke wrote to the Lord High Treasurer “praying a commission as brigadier, and that he may have Lillingston’s regiment, he not coming over to it.”<sup>2</sup> He goes on to say:—“He had endured more fatigue than if he had been anywhere else; had had the plague, pestilence, and bloody flux, and he had endured a hurricane which was as dreadful as possible for human nature to have an idea of.”<sup>3</sup> These representations did not bring Parke the commission he coveted, and the regiment he asked for; but the home authorities ordered Brigadier Lillingston to join his regiment in the West Indies without further delay. Now Lillingston was as brave a man as ever buckled on a sword, and during a long military career had never previously shirked the call of duty. He had had two terms of West Indian service; had succeeded to the command of a regiment of foot just after the expedition to Martinique, in 1693; and, owing to the great mortality on board the fleet, his regiment was impressed for sea-service, and the men had to serve as ordinary seamen on the homeward voyage from Boston, in New England, to Portsmouth.<sup>4</sup> In December, 1694, a new regiment was raised for Lillingston out of the ashes of his old one, and he again proceeded to the West Indies. In a few years’ time this second regiment had ceased to exist; and in April, 1705, a new corps was raised by Luke Lillingston, which was sent to Ireland the same year. It would appear that this officer intended taking over the command of his regiment in the Leeward Islands in the summer of 1708, as he inserted the following quaint advertisement (which attracted the great Marlborough’s attention) in the *London Gazette*, of May 27th, 1708:—

“Luke Lillingston, Esq., Colonel of one of Her Majesty’s regiments of foot, having received positive orders to go upon service again to the West Indies; this is to give notice that he, having in the late reign, purchased an estate at Ferriby, situated five miles from Hull, six from Beverley, three from Cave, in a pleasant, healthful air, a good hunting country, and with hounds in the town; he hath built a new house, with six rooms on a floor, besides closets and all sash-windows, all completely furnished; as also stable-yards, coach-houses, barns, brew-house, granaries, pigeon-houses, with walled gardens, orchard, all well and newly planted with choice fruit of all

<sup>1</sup> Colonel Parke to the Lord High Treasurer, dated “November 18th, 1707.”

<sup>2</sup> “ ” “ ” dated, “Nevis, October 17th, 1707.”

<sup>3</sup> *Ibid.*

<sup>4</sup> Memoir of Brigadier Luke Lillingston in the “Dictionary of National Biography.”



"sorts; on the south side of the house a fine river, with salmon, "turbot, and all sorts of river fish, with 240 acres of arable, and "about 100 acres of pasture and meadow, good part of it tithe-free; a good stable of horses for the saddle and coach, and "all diversions, with saddles, trunks, water-decks, three new "tents with all things belonging to them, all new made in the "year 1706 for his going to Spain or Portugal; as also a new "chariot, two four-wheeled chaises, all which is to be sold [for] "a penny-worth. Enquire at the said colonel's lodgings, at the "Green Rails in Bury Street, near St. James's, or at his seat "above-mentioned. The seat is well-wooded, and ponds for "fish, and a church within two stones' cast of the house."

The above property was not sold, and the owner did not go to the West Indies. On June 2nd, 1708, Lillingston left the Service, and the colonelcy of his regiment was bestowed on Lieut.-Colonel James Jones.<sup>1</sup>

Whilst these events were transpiring in the Leeward Islands, Brigadier Handasyde, governor of Jamaica, kept hammering away at the home authorities to increase his regiment, then in Jamaica, which was rapidly dwindling away. At length two additional companies were raised for the same in England, and after a short training at Tilbury Fort where, for lack of clothing and pay, many recruits fell sick,<sup>2</sup> they were shipped off. No colonel ever looked better after the welfare of his men than Brigadier Handasyde did. When remittances from England for the payment of his regiment failed, for long intervals together, Handasyde borrowed money to pay the men and keep them from starving.<sup>3</sup> The lieut.-colonel and two captains were sent home to raise additional recruits for the regiment, and with great difficulty about four-score men were sent out to Jamaica in the spring of 1710. Let us see what their expectant colonel thought of them:—

"I have received 78, or 79, recruits by the two last "pacquets, but most of them are the saddest mortals that ever "were sent out of the Kingdom, being of all nations and "languages, and of as many religions."<sup>4</sup>

The recruiting officers who raised these "bad bargains" complained that they only received the same allowance as for men raised for service in England, viz., £3 per man levy money.<sup>5</sup>

In 1712, Major-General Handasyde, worn out with hard work, and weary of the "headstrong, ungovernable people," as he terms the Jamaica colonists, over whom he had ruled for eight long years, resigned the command of his regiment to his son Roger, and returned to England. Two years later the men of the regiment fit for duty were formed into two

<sup>1</sup> "Military Entry Book," Vol. IX.

<sup>2</sup> "The humble memorial of Wm. Lyndall and Fisher Wentworth, captains of additional companies in Colonel Handasyde's regiment." S.P. Jamaica, Vol. X.

<sup>3</sup> Treasury Papers, Vol. XCVIII. No. 103, June 8th, 1706.

<sup>4</sup> Handasyde to Board of Trade, 4th June, 1710.

<sup>5</sup> Captain Robt. Gardiner, regimental agent, to Handasyde, undated.

independent companies in Jamaica, the officers and staff proceeding to Europe to recruit.<sup>1</sup>

Returning to the Leeward Islands, we find that Jones's regiment had in no wise benefited by the change of colonels. The soldiers had now got King Hydra instead of King Log! In the winter of 1709-10 Colonel Parke received a "petition" from "the poor and distressed soldiers belonging to the regiment of the Hon. Colonel James Jones in the Island of St. Christopher." After enumerating some of their grievances, the petitioners go on to say:—

"All this great misery has befallen us since Colonel Jones had the regiment, for before we had some money and some clothes; but since he was our colonel, which is about two years, we have had neither clothes nor money. Our officers told us they received none from their colonel. . . . We had long since laid this our condition before your Excellency, but for fear of our officers, from whose fury we now beg protection."<sup>2</sup>

Colonel Parke speedily found out that Colonel Jones was playing the old game of returning false musters, and he determined to put a stop to it. This is how he set about it:—

"I have carried Colonel Jones with me" (wrote Parke to "the Board of Trade") "from island to island and mustered the whole regiment, and find in the whole but 260 effective men; though the several lieut.-governors, whose business it was to muster them, have constantly mustered them full."<sup>3</sup>

Reformers, whether civil or military, had a precarious existence in the West Indies in the days of Queen Anne.

A violent insurrection broke out in Antigua, the seat of Government, on December 7th, 1710, and several of the ringleaders, headed by Captains Pigott and Paynter, forced their way into Colonel Parke's house and made a murderous assault on him. Parke made a splendid defence, and killed Captain Pigott with his own hand. But being overpowered by numbers he was barbarously murdered, his body dragged down the steps outside his house and treated with the most brutal indignity. Parke's secretary, one Thos. Kirby, played the part of Judas, and fired the first shot at the colonel. Only one man appears to have taken the governor's side when suddenly attacked. This was Michael Ayon, who had been promoted by Colonel Parke from the ranks of Jones's regiment to an ensigncy, and had been made provost-marshal of the Leeward Islands.<sup>4</sup> Thus miserably perished a brave soldier and a conscientious ruler. Major Walter Douglas, of Major-General Livesay's regiment, succeeded Colonel Parke as governor and captain-general of the Leeward

<sup>1</sup> Cannon's "Records of the 22nd Regiment of Foot."

<sup>2</sup> Petition among the "Board of Trade Papers for the Leeward Islands."

<sup>3</sup> Letter from "Antigua, April 24th, 1710."

<sup>4</sup> Extracted from a printed report relating to Colonel Parke's murder, Leeward Islands Papers.

Islands. He had full power given to him to bring the leaders of the late insurrection at Antigua to justice, and he soon discovered that three officers of Jones's regiment were deeply implicated:—

"I have upon good information" (wrote Major Douglas to "the Board of Trade") "sent home on board H.M.'s ship 'Lark,' Captain Norbury commander, three officers of Colonel Jones's regiment, viz., Captain [Joseph] Rookby, Lieutenant [Thos.] Watts, and Ensign [Henry] Smith. The depositions and witnesses that appear against them will convince your Lordships of the dangers this Colony was involved in by men of their principles and behaviour."<sup>1</sup>

The year 1710 closed in Great Britain by the fall of the great Whig administration of Queen Anne. Marlborough virtually fell with his party, and the rival faction which succeeded to power made no effort to bring to justice the murderers of Marlborough's *protégé*—Daniel Parke. Hence it fell out that it was not until 1714 that Ensign Henry Smith, one of the leaders of the insurrection in Antigua, in 1710, was prosecuted at the King's Bench for aiding and abetting the murder of Colonel Parke. It was a test case, and it fell through for want of sufficient evidence.<sup>2</sup> Justice is proverbially blind.

One good thing resulted from the insurrection in Antigua. The home authorities placed Jones's regiment on the establishment for sea-service, thus removing the corps temporarily from the Leeward Islands. But Colonel Jones did not accompany his regiment on this service. In January, 1711, he had obtained "leave of absence to return to England for the recovery of his health,"<sup>3</sup> and in November, 1711, he disposed of his regiment to Lieut.-Colonel Francis Alexander of the same corps.<sup>4</sup>

<sup>1</sup> Leeward Islands Papers.

<sup>2</sup> Memoir of Colonel Daniel Parke in the "Dictionary of National Biography."

<sup>3</sup> License granted by Queen Anne, and dated "12th January, 1711."

<sup>4</sup> "Military Entry Book." Vol. VIII.

## NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Rear-Admiral—G. H. U. Noel to be Rear-Admiral in Mediterranean Fleet. Captains—A. W. Moore, C.B., C.M.G., to be Junior Sea Lord of the Admiralty; C. J. Norcock to be Commodore of the second class in command of the South-East Coast of America; W. S. Gibson to "Katoomba"; J. H. Rainier to "Thunderer"; J. R. Jellicoe to "Centurion"; R. L. Groome to "Repulse"; F. Powell, C.B., to "Mars"; J. P. Pilon, C.B., C.M.G., to "Caesar"; R. F. Henderson, C.B., to "Asia" for Steam Reserve; A. W. E. Protheroe to "Flora"; A. K. Bickford, C.M.G., to be Captain Superintendent of Sheerness Dockyard; J. L. Hammett to "Trafalgar"; W. F. S. Mann to "Sans Pareil." Commander—H. N. Rolfe to "Cockatrice."

The first-class battle-ship "Nile" arrived at Plymouth from the Mediterranean on the 30th ult.; she paid off on the 12th inst. and recommissioned the following day, taking the place of the "Devastation" as port-guard-ship, thus adding another first-class battle-ship to the Home Squadron, ready for immediate service; the "Devastation" was also paid off the same day into the Fleet Reserve. The new first-class battle-ship "Caesar" commissions at Portsmouth on the 13th for the Mediterranean, taking the place of the "Nile" on that station. It is reported that the Admiralty have decided to strengthen the Reserve Squadron by the addition of another battle-ship, to be stationed at Buncrana, on the North Coast of Ireland, and arrangements for laying the moorings in Lough Swilley for the berthing of the vessel are being made at Devonport Dockyard. There are at present only three sea-going vessels stationed on the Irish coast, viz., the "Collingwood," at Bantry; the "Melampus," at Kingstown; and the "Howe," at Queenstown. The additional vessel, like the "Collingwood," "Howe," and "Melampus," will be regarded as a Coastguard district vessel, and will be used for the training of the Coastguard and Royal Naval Reserve men of the North of Ireland, and also for recruiting from that district for active service. The vessel to be appropriated for this duty has not yet been selected, although the "Thunderer," now at Pembroke, has been mentioned, as, after the "Devastation" is relieved by the "Nile" at Devonport, it is proposed to replace the "Thunderer" at Pembroke by either the "Anson" or the "Camperdown." The new second-class cruiser "Arrogant" is to be commissioned for service with the Channel Fleet, relieving the "Hermione."

The new first-class cruiser "Diadem" arrived last month at Portsmouth from Glasgow, and it is hoped that her steam and gun trials, commencing on January 10th or 11th, will form a consecutive series. At her preliminary trial, with 118 revolutions, the vessel exceeded a speed of 20 knots, and this speed was also attained at a spurt on her run from Glasgow to Portsmouth. But with 88 revolutions she was able to keep up a steady speed of 16·8 knots. On the run only half her boilers were used. During the voyage round she fell in with a heavy gale, but, though the spray broke over her funnels, the vessel maintained her stability admirably.

The new first-class battle-ship "Hannibal" has completed her four hours' forced-draught trial off Portsmouth, which proved a complete success. She drew 24 feet 8 inches forward and 25 feet 4 inches aft; with 12,138-I.H.P. and 103 revolutions she attained a speed of 18 knots, the coal consumption being 2 lbs. per unit of power per hour. The third-class cruiser "Porpoise" sailed

on the 17th ult. for Australia; the following are the results of her three hours' commissioning trial under natural draught:—Draught of water forward was 13 feet 11 inches, and aft 16 feet 3 inches; steam in boilers was 128 lbs. to the square inch, and the vacuum 24 inches; the "Porpoise" was only required to develop 2,200-H.P., but 2,235-H.P. was realised, and produced 127·8 revolutions, which gave a speed by patent log of 14·8 knots.

The new torpedo-boat destroyer "Star" has carried out her trials at Portsmouth successfully. The preliminary trial was so satisfactory, that it was decided to accept it as official; the speed maintained with 394 revolutions being 30·66 knots. On her second trial the mean speed of the three hours was 30·68 knots, while in the last half-hour she ran at a speed of 31·9 knots. She also carried out her stopping, starting, and circling (ahead and astern) trials, all of which proved highly satisfactory. The "Star" is the fifth 30-knot destroyer built and engined by the Palmer Shipbuilding Company that has completed her trials at Portsmouth, and the "Flying Fish," which has been delivered, will be run early in the year. The new second-class cruiser "Arrogant" had an unsatisfactory thirty hours' steam trial at 2,000-I.H.P., last month. Although the vessel went out for a thirty hours' trial in the Channel, she was actually under trial for twenty-two hours only, as several hours were occupied in effecting machinery repairs. The mean results for the twenty-two hours were:—I.H.P., 2,071; revolutions, 79; speed, 10·8 knots; coal consumed, 2·89 lbs. per I.H.P. per hour, of which amount 0·8 lb. only was consumed by the boiler set apart for working the auxiliary engines. As these records are regarded as satisfactory the Admiralty officials who were present have proposed that they be registered as the mean results for a full thirty hours' trial. If this is approved by the engineer-in-chief the next trial of the "Arrogant" will be at a mean I.H.P. of 7,000.

The new second-class cruiser "Vindictive," which was floated out at Chatham on the 9th ult., is of the same class as the "Furious," "Arrogant," and "Gladiator." The length is 320 feet, beam 57 feet 6 inches, mean draught 21 feet, and displacement 5,805 tons. She is fitted with twin screws, and her engines, which have been built in Chatham Dockyard, will develop with natural draught 10,000-I.H.P., the speed of the ship being 19 knots. There are eighteen boilers of the Belleville type, in three water-tight compartments. The engines are triple expansion, with cylinders 26 inches, 42 inches, and 68 inches in diameter respectively, and 39-inch stroke. The coal capacity is 1,175 tons—730 tons stowed in the lower bunkers abreast the machinery, and 445 tons in bunkers on the protective deck—which would enable the ship to steam thirty-seven and a half days at 10 knots. The fore conning-tower is of 8½-inch Harveyized steel of circular form (manufactured by Messrs. Cammell and Co.). From the base of the conning-tower a forged steel communication tube, 4 inches thick (manufactured by Messrs. J. Brown and Co.), is led down to the armour deck, inside which are the controlling shafting to the steering engines, etc. On the bows there is protective plating of 2-inch nickel steel, and the protective deck is composed of two thicknesses, on the flat, one of 1 inch and one of ½ inch, and on the slopes one of 2 inches and one of 1 inch. The armament comprises four 6-inch, six 4·7-inch, eight 12-pounders, and three 3-pounder Q.F. guns, one 12-pounder field gun, and five Maxim machine guns. There are two submerged tubes for 18-inch torpedoes. The complement of officers and men is 419. The first keel plate was laid down on 27th January, 1896.

In view of the importance of ships coaling quickly in war-time, the following particulars of two record coalings which took place in the Channel Fleet at Vigo Bay, on November 29th, are of interest:—The "Majestic," flag-ship, commenced coaling at 8 a.m. from the collier "Portugalete," carrying 1,425 tons of coal. She finished coaling at 12.35, taking in a total of 670 tons in 4 hours 35 minutes.



The "Magnificent," flag-ship of the Second-in-Command, commenced coaling at 8 a.m. from the collier "Pontypridd," carrying 2,038 tons of coal. She finished coaling at 12.50, having taken in a total of 775 tons in 4 hours 50 minutes, averaging 160.4 tons per hour; during the third and fourth hours she took in a total of 175 and 174 tons per hour. Both ships had to break bulk. The best record previous to this was done by the "Magnificent" at Gibraltar in October, when she took in 788 tons from a collier in 5 hours 40 minutes, averaging 139.1 tons per hour.

A Parliamentary Paper has just been issued giving returns of the number of courts-martial held and summary punishments inflicted on seamen of the Royal Navy, etc., during 1896. The total number of courts-martial at home and abroad on seamen of the Navy and Marines afloat was 158, for the trials of 160 persons. Of these, 4 were acquitted, 5 sent to penal servitude, 81 sentenced to imprisonment and dismissal with or without disgrace, 68 sentenced to imprisonment with hard labour, 1 was disgraced, and 1 incurred forfeiture of pay. A grand total of 79,958 summary punishments were inflicted. Two hundred and twenty courts-martial were held on men of the Royal Marines serving at headquarters or at Walmer for the commission of 331 offences. There were two acquittals, 13 reductions to the ranks or a lower grade, 178 were imprisoned with or without hard labour, 26 were discharged with ignominy, and 1 man was simply put under stoppages. The minor punishments inflicted on the marines ashore numbered 2,542. These figures compare as follows with those for 1886. If we take the seamen and marines afloat, out of a total of 50,139 men in 1886, 169 were tried by court-martial, but ten years later only 160 were tried out of 77,301 men. Similarly, if we take the marines on shore, we find that in 1886 out of 6,159 men 214 were tried by court-martial, and in 1896 220 out of 6,341 men. Out of 50,139 petty officers, seamen, and marines afloat in 1886 a total of 50,033 summary punishments were inflicted, but in 1896 the number had risen to 79,958 among 77,301 men. Among the marines on shore 2,363 summary punishments were distributed in 1886 among 6,159 men, and in 1896 2,542 punishments among 6,341 men.—*The Times and Naval and Military Record.*

The trial of a Vickers 6-inch Q.F. gun and mounting took place at Shoeburyness on Monday, the 13th ult., in the presence of War Office and Admiralty officials. This trial was carried out in continuation of that recently completed by the Admiralty at Portsmouth on board the gun-boat "Pincher." The object of this further trial was to test the accuracy of the gun after having fired upwards of 200 rounds, including the rounds fired at the proof of the gun; and also to submit the gun to a further test for rapidity, under conditions of service, using a 100-lb. shot, a cordite charge and service primers.

The trial began with a series of ten rounds, the result of which showed that the accuracy of the gun had not fallen off in consequence of the great amount of work already done by it. On two occasions the projectile passed through the same hole in the target. In the afternoon the rapidity series was successfully completed. This series was conducted by a crew of seamen gunners specially sent from the "Excellent" for the purpose, who were in charge of Lieutenant J. Murray Aynesley, the experimental officer of the Gunnery School. Thirty-six rounds were fired in 4 minutes 47 seconds, and this time included taking temperatures of the vent head, which operation was considered desirable, owing to the very rapid rate of fire. This rate of fire gives practically one round for each 8 seconds, or at the rate of 100 rounds in 13½ minutes, and (allowing 100 seconds for cooling during the 100 rounds, which extra time would probably be necessary for the supply of ammunition on board ship) would give a rate of fire of 100 rounds in 15 minutes. For a short series of rounds, such as one would expect in an engagement of, say, from ten to twenty rounds fired intermittently, an even greater rate of fire would be attained.

An analysis of the rounds fired during the trial show that the maximum rate of fire attained was one round in six and a half seconds, and eight rounds were fired each taking seven seconds, and another eight rounds each taking seven and a half seconds. The other rounds varied from eight to nine seconds. In the previous trials at Portsmouth a velocity of 2,784 foot-seconds was obtained for a pressure of 15.9 tons. From an artillerist's point of view the great advantages for naval purposes (where the range cannot always be accurately gauged) to be attained from so high a velocity are great. The high velocity produces a low trajectory for usual fighting ranges, and therefore the dangerous space of a ship being fired at is great; in other words, the point-blank range of the gun is considerable, the elevation due to a 2,000 yards range being about 1°. The striking energy at a close range from such a gun would exceed 5,000 foot-tons per each round. It is of interest to note that the old system of obturation has again been introduced, but improved in many respects to admit of the rapid rate of fire necessitated by the modern quick-firer. The large and heavy metallic case is not necessary, the result of which is a great saving of weight on board ship, as well as space in the magazine which can be made use of for carrying more ammunition or for constructive purposes. As no metal case is used, there is one operation less in preparing the gun for another charge, no case having to be removed after firing; besides, the mechanism is simplified by not having to provide for the case ejector. Throughout the trial the breech mechanism worked with the greatest ease, the tube was satisfactorily ejected automatically, and the obturator was faultless in its action. The special Q.F. mounting, which is equally suited for a fort or for a ship, worked without a hitch.

In the interval between the preliminary series of rounds and the final series an armour-plate experiment was conducted, the object of which was to ascertain the effect of firing a 9.2 steel common shell against a 6-inch plate inclined to an angle of 30° to the normal. The plate was supplied by Messrs. Vickers, and the dimensions were 6 inches by 8 feet by 6 feet. It was made of specially treated nickel steel, and was held in wood struts front and rear, which were secured at the top by screwed bolts and held at the bottom between iron slabs running parallel to the plate, and buried 6 feet into the ground. The backing was of 4-inch teak, behind which were half-inch steel plates, the whole being secured to the armour-plate by eight bolts. The target, as thus described, exactly represented the side of a battle-ship of the "Canopus" and "Vengeance" class. The gun used was a 9.2-inch B.L., giving a strong velocity of 1,892 foot-seconds and a striking energy of 9,460 foot-tons. The projectile was of the usual service design, weighing 381½ lbs., and was filled and fused in the ordinary manner. The shot struck 2 feet 9 inches from the bottom and 3 feet 5 inches from the right edge of the plate, and broke up against the hardened face without materially damaging the plate in any way beyond causing a slight indentation at the point of impact, and slightly scaling it round the centre. The supports, etc., were shifted rearwards, but the plate was for all practical purposes uninjured.—*The Times*.

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FRANCE.—The following are the principal appointments which have been made: Capitaines de Vaisseau—M. A. Huguet to "Lapérouse," in command of the East Indian Naval Division; J. A. Philibert to "Descartes"; I. E. Thesmar to "Jean Bart"; P. B. Fortin to "Dévastation"; G. I. Comprito to "Jemmapes."—*Le Moniteur de la Flotte*.

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The new first-class battle-ship "Masséna" has had some new tubes fitted in her boilers at Brest, and has also had her heavy guns mounted in her barbettes. She carries two 27.4-centimetre (10.8-inch) guns in barbettes, one on each beam, and two 30.5-centimetre (12-inch) guns in barbettes, one forward and one aft; she has also received her eight 10-centimetre (3.9-inch) Q.F. guns, which ar

protected by 2-inch shields made of special steel; her eight 13·8-centimetre (5·3-inch) Q.F. guns have been mounted sometime. During a preliminary trial on the 13th ult., with the engines developing 12,000-I.H.P., she maintained a speed of 16 knots; her official trials are to be commenced as soon as possible, and the ship completed, so that she may assume her place as the flag-ship of the Northern Squadron, relieving the "Hoche." The new second-class cruiser "D'Assas," having received new tubes for her boilers, completed satisfactorily her preliminary trials at Brest on the 18th ult.; with the engines developing 8,000-I.H.P., and making 135 revolutions, the mean speed was 18 knots, with a coal-consumption of 0·87 kilogramme per H.P. per hour. She commenced her official trials, with a coal-consumption trial at 2,000-I.H.P., and 13 knots speed, on the 23rd ult.; the runs were made over the new measured mile base in the Bay of Douarnenez, where there is a depth of water of sixteen fathoms; the number of revolutions was 87, and the consumption of fuel per I.H.P. per hour was 750 grammes, but the trial was not altogether satisfactory, some defects being discovered in her boiler tubes. The second-class cruisers "Friant" and "Chasseloup-Laubat" have concluded their experimental trial in company, to test whether the bilge keels lately fixed to the "Chasseloup-Laubat" made her any steadier in a seaway than the "Friant," which is not so fitted; it was found that the "Friant" rolled 20° to the "Chasseloup-Laubat's" 10°. The new first-class battle-ship "Gaulois" is to be commissioned on the 15th inst., in preparation for her trials, but her complement for the present will be very small. The first-class battle-ship "Magenta" was commissioned at Toulon on the 1st inst., to take the place of the "Redoutable" in the Active Squadron of the Mediterranean Fleet; the "Redoutable" is to be paid off into the second category of the Reserve at the same port, and some important alterations are to be carried out on board; among other things, the four 27·4-centimetre (10·8-inch) guns in her redoubt are to be replaced by four 24-centimetre (9·4-inch) guns of the latest pattern, while her six 138-millimetre (5·4-inch) guns are to be replaced by six 10-centimetre (3·9-inch) Q.F. guns. Imperative orders have been received at Toulon from the Ministry of Marine to hurry on the completion of the new first-class station cruiser "D'Entrecasteaux," her services being urgently required. She was commissioned on the 1st inst. with the usual reduced complement for her trials, and it is intended that she shall take the place of the old cuirassé de croisière "Bayard" as flag-ship in China; the "Bayard" will not return to France, but will be paid off into the Reserve at Saigon, where she will join her sister-ship and predecessor, the "Triomphant." The two new second-class cruisers "Cassard" and "Du Chayla," are both now nearly ready for commissioning at Cherbourg. The new second-class cruiser "Catinat," now undergoing her preliminary trials at Cherbourg, is, when ready, to relieve the old second-class wooden cruiser "Duguay-Trouin" as senior officer's ship in the Pacific.

The first-class barquette cruiser "Jean Bart," in the second category of the Reserve, was commissioned at Brest on the 2nd ult., and left for China on the 12th ult. to strengthen the squadron in those waters. During her commissioning trial of six hours at nine-tenths of her power she averaged 17 knots. She was launched in 1889, and under forced draught her engines are supposed to develop 8,000-I.H.P., and to give the ship a speed of 19 knots. Her armament consists of four 16-centimetre (6·3-inch), six 14-centimetre (5·5-inch) Q.F. guns, with 22 small Q.F. and machine guns, with three torpedo-discharges. Before she sailed, Vice-Admiral Fournier, Maritime Prefect of Brest, issued an order congratulating her captain and the dockyard authorities on having got the vessel completed and ready for service on a distant station in so short a period as ten days. The second-class cruiser "Pascal" has also left for China.

From the 1st January this year the *Défense-Mobile* of Corsica has been made independent of the Submarine Defences of Toulon, and placed on its now

footing. A capitaine de frégate will be placed at the head of the new organisation and under the direct orders of the captain commanding the Corsican Naval Division. A reserve of torpedo-boats similar to that in Algeria is to be constituted, and the first-class torpedo-boats "178," "123," "185," and "97" have been commissioned at Toulon, and will proceed to Ajaccio, where the reserve will be stationed; the torpilleurs-de-haute-mer "Capitaine Mehl" and No. "139" have been commissioned also at Toulon to relieve Nos. "169" and "134" in the *Défense-Mobile* of Corsica.

The torpilleurs-de-haute-mer in the second category of the Reserve at Toulon have been constituted into five groups, as follows:—

1st Group	...	...	"Agile" and "Mousquetaire."
2nd "	...	...	"Coureur" and "Ouragan."
3rd "	...	...	"Chevalier" and "Tourmente."
4th "	...	...	"Argonaute."
5th "	...	...	"Dragon" and "Aventurier."

The following ships will be commissioned and paid off during the first quarter of the new year, according to present arrangements:—

*Cherbourg*.—The new second-class cruiser "Du Chayla," after her trials, will be attached to the Reserve Division of the Mediterranean Fleet; the new second-class cruiser "Cassard" will, after her trials, be fully commissioned and join the Active Squadron of the Mediterranean Fleet, relieving one of the cruisers there, which will be paid off into the Reserve; the second-class cruiser "Chasseloup-Laubat," after her trials are completed, will be placed in the second category of the Reserve; the torpedo-cruiser "Fleurus" is to be commissioned for trials in March.

*Brest*.—The new second-class cruiser "D'Assas," after her trials, will be commissioned for service with the Active Squadron of the Mediterranean Fleet, where she will relieve a cruiser which will be placed in the Reserve; the first-class battle-ship "Gaulois" commissions on the 15th for trials.

*Lorient*.—The transport "Caravane" will commission for service on the coast and at Iceland; the third-class cruiser "Laclocheterie" will commission towards the 1st April for service in Newfoundland; the aviso "Manche" will commission about the 1st of March for fishery service off Iceland and Newfoundland.

*Toulon*.—The second-class battle-ship "Redoutable" will be detached from the Mediterranean Squadron in the early part of January, and be placed at Toulon in the second category of the Reserve; the first-class gun-boat "Gabès" commissions for the East Indian Naval Division; the gun-boat "Étoile," doing duty as *stationnaire* at Constantinople, is to be paid off; the first-class cruiser "D'Entrecasteaux" commissions for her trials; the first-class battle-ship "Magenta" commissions after her trials to relieve the "Redoutable" in the Mediterranean Squadron; the first-class aviso "Papin" commissions in the beginning of March to relieve the "Amiral Parseval," a sister-ship in the Pacific; the second-class aviso "Chimère" will commission for coast-surveying service.

*Cochin-China*.—The aviso "Bengali" will pay off at Saigon, transferring her crew to the "Vipère."

The ships of the Squadron of the North will receive their full complements during March, and it is contemplated that they shall be fully commissioned for eight months; last year the squadron was in full commission for six months, and in 1896 for four months only.

Following the explanation of the Minister of Marine to the Commission of the Budget, 200,000 francs have been voted for the defences of "Corsica." No definite information is given as to the proposed works, but it is reported that after the

entry of the battle-ship "Terrible" last July into the port of Bonifacio (till then considered an impossibility for large ships), and the report forwarded by Vice-Admiral Humann as to the strategical importance of this position, the Minister of Marine decided to undertake certain works for the amelioration of the port, so as to make the entry less difficult and allow of its being adapted for the anchorage of a division, coast-defence vessels, and a torpedo flotilla.

After completing these works, any balance of the credit remaining will be devoted to improving Ajaccio as a torpedo-boat station and enlarging the coal storage at the Baie des Cannes.

A first-class armoured cruiser, to be called the "Dupleix," has been laid down at Rochefort, replacing the cruiser "D 3," of 5,500 tons, which figured in the budget vote of 1897. The "Dupleix" will have a displacement of 7,700 tons, vertical triple-expansion engines, multitubular boilers, three propellers, and an estimated speed of 21 knots. Her armament will consist of ten 16·4-centimetre (6·3-inch), ten 3-pounder, and six 1-pounder Q.F. guns, and two above-water torpedo-discharges. Her cost will be 15,500,000 francs, and she will practically be a sister-ship to the "Kléber" and "Desaix."

The "Charles Martel," a photograph of which forms our frontispiece, is one of the new first-class battle-ships; although launched as long ago as 1893, she was only completed for service last year. Her dimensions are as follows:—Length, 302 feet 6 inches; beam, 71 feet; displacement, 11,880 tons, with a draught of 27 feet 6 inches. She is protected by an all-round water-line belt of 17·8-inch steel; her barbettes for the heavy guns have 15·8-inch steel armour; the casemates for the secondary battery are of 3-inch steel, and there is an armoured deck 3·5 inches thick. Her armament consists of two 30·5-centimetre (12-inch) guns, one forward and one aft, in barbettes; two 27·4-centimetre (10·8-inch) guns in barbettes, one on each beam, sponsoned out so as to allow of end-on fire; eight 5·5-inch Q.F. guns in casemates, with twenty-three small Q.F. and machine guns, and six torpedo-tubes. Her engines develop 13,500-I.H.P., giving a nominal speed of 18 knots.

According to present arrangements, the Active Squadron of the Mediterranean is to be composed as follows during 1898:—

First-class battle-ships—"Brennus" (flag-ship of Commander-in-Chief), "Carnot," "Charles Martel," "Formidable," "Jauréguiberry," "Magenta," "Marceau," "Neptune," and "Redoutable" (after her guns have been changed).

First-class armoured cruisers—"Chanzy" and "Latouche-Tréville."

Second-class cruisers—"D'Assas" and "Cassard."

Third-class cruisers—"Galilée," "Linois," and "Troude."

Torpedo dépôt-ship—"Foudre."

Torpedo-avisos—"D'Iberville," "Wattignies," and "Lévrier."

Torpilleurs-de-haute-mer—"Argonaute," "Flibustier," "Forban," "Mousquetaire," "Sarrazin," and "Tourmente."

Squadron torpedo-boat—"Cyclone."

The Reserve Division of the fleet is to consist of:—

First-class battle-ships—"Amiral Duperré" (flag-ship of Rear-Admiral Commanding).

Second-class battle-ship—"Dévastation."

Third-class battle-ship—"Friedland."

First-class armoured cruiser—"Amiral Charner."

Second-class cruiser—"Du Chayla."

Third-class cruiser—"Lalande."

Aviso-torpilleur—"Léger."

Torpilleurs-de-haute-mer—"Dragon" and "Téméraire."



It is intended that the squadron shall be fully commissioned for one month, and have reduced complements for the remaining eleven months.

The Squadron of the North will be composed as follows:—

First-class battle-ship—"Hoche" (flag-ship of Commander-in-Chief), to be relieved by "Masséna."

Coast-defence battle-ships—"Amiral Tréhouart," "Jemmapes," "Bouvines," and "Valmy."

First-class armoured cruisers—"Dupuy de Lôme" and "Amiral Pothuau."

Second-class cruisers—"Friant," "Catinat," and "Surcouf."

Torpedo-avisos—"Fleurus," "Cassini," and "Durandal."

Torpilleurs-de-haute-mer—"Aquila," "Mangini," and "Lansquenec."

With regard to the composition of the squadrons given above, it should be observed that several of the ships detailed have not yet completed their trials, and one, the "Durandal," is not yet launched.—*Le Temps, Le Yacht, and Annexe No. 6 Budget des Dépenses du Ministère de la Marine.*

RUSSIA.—In consequence of the successful results obtained with naphtha fuel on board torpedo-boat No. "16" with Danilim piston-rods, it has been determined to bring that kind of fuel into use this year in all the torpedo-boats with Yarrow boilers. The engineer under whom the trials were made introduced an alteration, letting the air pass through the screw casings, thus making it mix better with the naphtha and increasing the intensity of the heat. The trials at the Baltic Works with naphtha fuel on board torpedo-boat No. "62," though not completely successful, go to show that pistons of any system will give good results, provided the naphtha is completely combusted. In just the same way any boiler can be fitted, to a certain extent, to work with any piston by certain alterations which ensure combustion.

A new hydraulic telemotor of great simplicity has been produced at the Baltic Works, the invention of an engineer named Paidaci. Its most novel feature is the absence of pumps for producing and supplementing the pressure in the tubes, as also of springs and of air caps. The apparatus is automatic. The reason is that the pipes which convey the hydraulic pressure are connected with some reservoir which contains steam at a certain pressure, *e.g.*, a boiler or separator. This steam being at a constant pressure serves as an accumulator of unvarying hydraulic pressure inside the tubes of the telemotor, which can at any required distance give an impulse either forward or backwards, and is thus used for the opening and shutting of all kinds of valves and water-tight doors, and also for steering and such purposes. The apparatus consists of two parts—the receiver and the acting mechanism, the former being placed at the point of direction, and the latter at that where the hydraulic power is to be exercised. The turning in any direction of the crank of the receiver causes a pin to penetrate one of the hydraulic cylinders, and makes another emerge from the other cylinder. Each of these cylinders is connected by a copper pipe about  $\frac{1}{2}$  inch in diameter with a similar one in the acting mechanism. The penetration of the pin causes increased pressure both in the cylinder and the pipe that runs from it, which is communicated through the water to a corresponding pin in the acting mechanism, which sets in motion a swing-bar, a ribbed sector, and a pinion.

A steam pinnacle for the Imperial Yacht "Poliarnava Zvezda," has been ordered of the White Works in England on the model of that built in 1894. It is to be ready by the beginning of the sailing season of this year, and to cost £810.

A new optical range-finder has been invented here, the principle of which is the refraction of rays in two prismatic glasses. In order to elevate or depress the rays, one of the glasses can be moved, thus increasing or diminishing the distance between them. Its extreme simplicity has led to representations being made as to its adoption in the officers' gunnery class and in gunnery ships.

The Murman coast never freezes and has abundance of inlets and bays. Unhappily most of these are so shallow that they cannot be entered by large ships, nor during north winds do they afford a good anchorage to smaller vessels. The harbour of Ekaterino, situated on the west coast of the Gulf of Kola, between the island of Ekaterino and the mainland, is not open to these objections. Sheltered from almost all winds, with deep water almost up to the shore and an even muddy bottom, it is suitable for ships of all draughts, and never freezes, in spite of the absence of wind. It is, however, not large enough to admit of the construction of a great naval and commercial port, such as we so urgently need on a coast which does not freeze, nor do the steep shores leave room for the construction of wharves. It is also but little use strategically, as it lies at the bottom of the Gulf of Kola, which can always be blockaded in war-time by a superior enemy. Even the railway would not ensure it a great future, and there are other places on the coast more suitable to the purpose.

The *Novoi Vremya* is alarmed as to the present education of naval officers. It writes:—"In our opinion the absolute duty of the Ministry of Marine is not only to increase the number of officers, but to raise their educational standard, which has fallen of late years. An entire re-organisation of the present naval school is required. Service on board modern ships requires specialists in gunnery, in torpedo work, and in navigation; and these the Corps of Cadets does not produce. There are separate schools at Cronstadt for training officers in the two former branches. So let the Cadet College, after giving its pupils a fair general education, add a special one at least in navigation, and thus earn the right to be called 'naval,' after having, with fatal effect, neglected this essential branch of study for a generation and a half."

It is now announced that the "*Sissoi Veliki*" has completed her repairs at Toulon, and is being made ready for service with the Russian fleet in Cretan waters.

The first-class battle-ship "*Petropavlovsk*" has completed her official power and speed trials, and the machinery, which was designed and manufactured by Messrs. R. and W. Hawthorn, Leslie and Co. (Limited), of St. Peter's Works, Newcastle-on-Tyne, has now been handed over to the Russian naval authorities. The dimensions of the "*Petropavlovsk*" are as follows:—Length, 367 feet 6 inches between perpendiculars; beam, 69 feet; and displacement, 10,960 tons at a mean draught of 26 feet. Her machinery, which is of 10,600-H.P., to be obtained under natural-draught conditions, consists of two sets of triple-expansion engines, having cylinders of 44 inches, 65 inches, and 98 inches, and 51-inch stroke. Steam is supplied to these by fourteen single-ended boilers, each about 14 feet 6 inches in diameter and 10 feet 6 inches long, having a heating surface of about 27,000 square feet, and a grate area of 1,040 square feet, the working pressure being 125 lbs. per square inch. Protection is afforded by a 15·8-inch water-line belt and by a 3·5-inch armoured deck. The armament consists of four 12-inch guns, mounted in barbettes protected by 10-inch Harveyized steel, one forward and one aft; twelve 6-inch Q.F. guns, eight mounted in pairs in small turrets, protected by 3-inch armour, and four mounted on main deck in 3-inch casemates, with thirty-eight small Q.F. and machine guns, with six torpedo-tubes. The vessel was built at the New Admiralty Yard at St. Petersburg. The trials were of a satisfactory character, the full-power trial of 12 hours passing off without hitch, steam being easily maintained with natural draught. The engines developed the contract power at a speed of 84½ revolutions per minute without trouble of any kind; during the previous trial the result was not satisfactory, as there was an irregular distribution of steam in the low-pressure cylinder of the starboard engine, which gave an average of 533-H.P. less than the port engine. Since the trials the whole of the machinery has been opened out, and, the examination having proved satisfactory, it has been accepted by the Imperial authorities, who expressed themselves as thoroughly pleased in all respects.

The Ministry of Marine has made arrangements by which the constructive services of the new dockyard now completing by the Franco-Belgian Company, at Nicolaieff, will be at the disposal of the Government. These works are of immense extent, covering an area of about 65 acres. The total cost of construction, with plant and appliances for the various departments of railway and marine engineering, railway carriage and truck building, rolling mills, smelting furnaces, dockyard, graving dock, general workshops, etc., is estimated at 100,000,000 francs. The shipbuilding department will be under the management of a member of the English firm of Swan and Hunter. A further impulse will be given to the expeditious construction of every class of war-vessel in the Admiralty and Franco-Belgian Dockyards at Nicolaieff with the deepening of the Boug to 36 feet. With the completion of this important work, which has been contracted for with an American company, first-class battle-ships will in future be entirely completed at Nicolaieff, instead of as heretofore being sent round to Sebastopol for plating and armament. The great obstacle has hitherto been the bar at Ouchakoff, which gives only 20 feet of water.

The second-class cruiser "Svetlana," constructed for the Government by the "Société des Forges et Chantiers de la Méditerranée," at Havre, has lately concluded successfully her steam trials. The speed, according to contract, was to be 20 knots, but during a run of six consecutive hours, the mean speed maintained was 20.21 knots, the maximum speed recorded being 21.6 knots, the expenditure of coal per I.H.P. per hour being only 600 grammes. The dimensions of the "Svetlana" are as follows:—Length, 331 feet; beam, 42 feet 8 inches; with a displacement of 3,711 tons, and a mean draught of 18 feet 9 inches. Her two triple-expansion engines develop 8,500-I.H.P., and she has a coal stowage of 400 tons, giving her a radius of action of 7,000 miles at 10 knots. There is a  $\frac{1}{2}$ -inch steel-armour deck, with 3-inch armour round the combings. The armament consists of six 15-centimetre (5.9-inch) Q.F. guns, and twelve 3-pounder Q.F. guns, with four torpedo-tubes. She was laid down on the 7th December, 1895. The "Svetlana" is intended to be used as a yacht by H.I.H. the Grand-Duke Alexis, who commands the Russian Navy, and her accommodation has been specially arranged with the object.

It is stated that the Naval Estimates for the coming year will, when published, show an increase of 6,000,000 roubles on those of last year, and that the credit allotted for the construction of new war-ships will amount to 24,800,000 roubles, and attempts will be made to carry out the building much more speedily than heretofore. At present a large armoured cruiser of the type of the "Rossia" is being constructed at the Baltic Works on the Neya; she will have three engines and three propellers, and the engines are to develop a total of 18,000-I.H.P. In the same yard two torpedo-destroyers of the type of the "Sokol" are being built; their hulls will be of nickel steel, and their engines will develop about 4,400-I.H.P., and they are intended to be in all respects superior to the "Hornet," and in some minor points improvements on the "Sokol." In Abo, at the works of Creighton and Co., two more torpedo-destroyers of the same type are in process of construction. In the Admiralty Works at Ijora a battle-ship of 12,674 tons displacement, 434 feet long, and 26 feet draught, of the type of the "Oslabija," is being built, and no less than twenty-four torpedo-destroyers of the "Sokol" type. Of these, twelve will be taken in parts to the port of Vladivostock, and twelve will be left in the Baltic Port. A light-ship for Nekmangrund and another for Port Nikolaieff in the Black Sea have also been ordered at the same place. An armoured ship of 8,800 tons displacement and 341 feet long, of the type of the "Rostislav," is to be built at Nikolaieff for the Black Sea fleet. In the same works a battle-ship of 12,480 tons displacement and 357 feet long, of the type of the "Three Saints" (Tri Sviatitelya), will shortly be laid down. Further, engines are now being made for the unchristened cruiser of the type "Rossia" (18,000-I.H.P.),

for the new cruiser of the type "Pallada" (11,610-I.H.P.), for the cruisers "Diana" and "Aurora" (11,610-I.H.P.), for the armoured turret-ship "Peresjet" (14,500-I.H.P.), for the "Oslabija" (14,500-I.H.P.), and for the barbette ship of the type of the "Tri Sviatitelya" (10,600-I.H.P.).

The Ministry of Marine has decided to provide next year the following guns:—Twenty-five 12-inch, 40 calibres in length; sixteen 10-inch, 45 calibres long; one 8-inch; forty-nine 6-inch Q.F. guns; twenty-three 120-millimetre Q.F. guns; a hundred 75-millimetre Q.F. guns; eight Baranovsky 2½-inch guns; 134 Hotchkiss 47-millimetre guns; and ninety-six Hotchkiss 37-millimetre guns. In addition, hydraulic carriages will be built for the 12-inch and 10-inch guns, turret mounts for the 6-inch pieces, and fixed carriages for the others. The Admiralty has also ordered 100 Whiteheads (new model), ninety-six 19-foot Whiteheads, and twenty 45-centimetre torpedoes. 112,000 roubles are to be expended on hand torpedoes, and 87,000 roubles on electric naval mines and mining material. For vessels in commission, 11,184,371 roubles; provisions, 6,946,906 roubles; guns and torpedoes, 5,089,296 roubles; workshops and offices, 4,487,556 roubles; for improvements in the port of Vladivostock, 6,000,000 roubles.—*Kronstädtski Vestnik* and *Le Yacht*.

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UNITED STATES.—*Navy Bureau of Ordnance*.—The Chief of Navy Bureau of Ordnance, Captain Chas. O'Neil, in his annual report, asks for \$7,434,351 for the coming year; \$4,254,800 of this is for the armament of vessels, \$1,000,000 for smokeless powder, \$500,000 for reserve guns for auxiliary cruisers, and \$1,011,000 for general expenses, including reserve ammunition. Thirty-four 13-inch guns have been thus far authorised; fourteen 12-inch, twenty-six 10-inch, seventy-eight 8-inch, one hundred and ninety-five 6-inch, one hundred and seventy-nine 5-inch, and two hundred and nine 4-inch; eighty-eight of these have been completed during the last year. No change in the general system of gun construction is made or contemplated. The guns in service have given entire satisfaction; there have been no difficulties with them, no accidents, no failures of any kind either with guns or breech mechanism; nor have any of them shown signs of deterioration in the bores, except a slight case of erosion in one of the "Indiana's" 13-inch guns. The main batteries have been installed on board all of the vessels except those not yet complete, and for these the batteries will be ready in advance of the vessels.

The conversion of 6-inch guns of ordinary type into Q.F. guns has begun; eight have been completed, and the conversion of nineteen more commenced. Eighteen of these for the "Newark" will be remounted on their original carriages, but those for the "Atlanta" will be mounted on new and improved pedestal mounts, and it is proposed to prepare six for the "Boston" in the same manner.

The ninety-five 6-inch guns now in service should be converted into Q.F. guns, retaining the old mounts, which conform to the vessels and their gun emplacements.

The report for 1896 enumerated 21 mail steamers of the first and third classes, for 16 of which proposed batteries are assigned, requiring forty-six 6-inch, twenty-seven 5-inch, and one hundred and four 4-inch guns. In addition, 44 vessels are scheduled requiring batteries as follows:—One hundred and seventy-eight 5-inch and one hundred and two 4-inch guns. Of these there are to be provided five 6-inch, one hundred and sixty-five 5-inch, and one hundred and fifty-seven 4-inch guns. But slight provision has been made for small guns for their secondary batteries thus far. There are to-day numerous other vessels which would, in case of war, be called into service for auxiliary cruisers.

A 6-pounder semi-automatic gun of the Maxim-Nordenfeldt type is now going through a series of endurance tests, and for the purpose of comparing it with the

6-pounder guns in service. Thus far it has performed very well, about 500 rounds having being fired from it.

A type mount of new design for the 13-inch guns will be tested about the latter part of the year; if satisfactory, twenty in all will be manufactured for the five battle-ships. The mount referred to has four nickel steel recoil cylinders symmetrically placed around the gun and containing also the springs for counter recoil. The gun slides in a steel sleeve which carries the trunnions, which are balanced on knife edges, making it possible to manipulate the elevating gear by hand.

The Bureau gives its verdict in favour of electric power for ammunition hoists and turning turrets. Lieutenant Haeseler has devised a scheme to overcome in great measure the difficulty of handling ammunition in the turrets of the "Texas." The range finders in service do not meet with favour from the commanding officers of vessels, who, as a rule, desire to discontinue their use. A new type with vertical base is now about to be tried, much less complex than those heretofore in use, known as the Searles-Saegmuller, after the makers, which promises to give good results. The Department having acquired the right to use the Johnson patents for soft steel caps, has begun to fit them to armour-piercing shell, and all recent contracts for such shell have required them to be capped.

The Bureau has, in the 6-millimetre ball cartridges, substituted a bullet of 112-grains weight, having a tinned-copper jacket for the 135-grain steel-jacketed bullet, which wore away after about 3,000 rounds. With the copper-jacketed bullet it is practically prolonged to 10,000 rounds. With the new bullet a velocity of 2,550 feet per second is obtained, with a chamber pressure of about 43,000 lbs., and its penetration in pine boards at 5 feet from the muzzle is practically 56 inches. It easily penetrates  $\frac{1}{2}$  inch of mild steel at 10 feet from the muzzle.

Fifty 6-millimetre automatic guns have been delivered by the Colt's Company and fifty more have been ordered. A new field mount to carry the gun and 2,000 rounds of ammunition has been designed and tested, with satisfactory results. The whole outfit weighs but 350 lbs. and can be handled with great facility by three or four men.

Three hundred and sixty Howell and Whitehead torpedoes have been ordered, 111 are in service, thirteen have been lost or damaged beyond repair, 122 are assigned as outfits, and 114 will be held in reserve. Experiments with the Obry steering device for torpedoes have demonstrated its efficiency, and it has been adopted for use in the service Whitehead torpedoes now under contract, and is being installed in them. The bow and stern tubes have been removed from all vessels except the "Oregon" and "Olympia," these vessels not having been available for the purpose.

As a result of the failure of the tests of the Gothmann system, the bureau expresses the opinion that the use of fulminate with high explosives to be fired from high-powered guns is too dangerous and too uncertain to warrant its introduction on shipboard in its present state of development, nor would it be advisable to use guns of special design with which to fire such missiles as part of the battery of a vessel; nor has it yet been shown that large charges of gun cotton exploded simply in contact with armour plates are sufficiently destructive to shatter them.

The Bureau is of opinion that the Government can purchase armour more cheaply than it can manufacture it. Foreign practice confirms this view; and even should the Department acquire a plant of its own, the chances are that it would be at a great cost, and that it would lie idle a large part of the time, and thus suffer great deterioration, and that the expense and difficulty of operating it when needed would more than offset any advantages gained by such ownership. Some interesting experiments have been made with high



manganese steel plates, which have given excellent ballistic results, and further experiments with thicker plates will be made.

It is recommended that the Department should hereafter manufacture brass cases for fixed ammunition. It is believed that this branch can be successfully added to the plant at the gun factory and result in a large saving of money. None of the service guns or mounts have failed under tests in any way. Since the establishment of the gun factory and this necessary adjunct, there has been a steady and marked improvement in new types of gun mounts designed and issued to the Service, in simplicity, efficiency, and ease of manipulation.

Much credit is due to Lieutenant J. B. Bernadou, United States Navy, for his intelligent and successful efforts in the development of smokeless powder. The problem may be considered solved, and the capacity of the powder factory at the torpedo station being insufficient to produce large quantities, the bureau has contracted with Messrs. Du Pont, De Nemours and Co., on this side, and with the California Powder Company, on the Pacific, to each manufacture 100,000 lbs. of smokeless powder.

*Report on an Armour Factory.*—December 1st. Commodore J. A. Howell, U.S.N., transmitted to the Secretary of the Navy the report of his Board. It shows that they have given the subject of establishing a Government factory for manufacturing armour plate careful consideration. Their report is a very thorough one. We doubt, however, whether it will lead to anything more definite than a fruitless discussion in Congress. The Board at the outset concluded that the basis of this capacity should be a plant capable of producing sufficient nickel steel, face-hardened, reformed armour, for two battle-ships, or about 6,000 tons of armour per year, the requirements being those "of a thoroughly modern, first-class establishment," as necessitated by the order.

After visiting the various armour plants, plans were prepared with the aid of Mr. John Fritz, an eminent engineer and steel expert, introducing improvements upon existing plants in the arrangement and in the selection of tools.

The estimated cost is:—For buildings and foundations, \$945,592.33; machinery, furnaces, and stacks, \$2,798,319.78; total, \$3,743,912.11. This estimate is based mainly upon figures obtained from responsible contractors, but are not, it will be observed, based upon contracts. One of the largest firms in England was solicited for bids, but declined to give them until Congress authorised the expenditure.

The processes of manufacturing armour are described in the report. They require an open hearth department, a forging and cementing shop, a bending and tempering shop, a machine shop, an erecting shop, a boiler-house, power plant, a blacksmith shop, a locomotive-house, a carpenter shop, an office building, a chemical and a physical laboratory, railroad tracks and equipment. The plant for each of these departments is described in detail. Besides these the latrines will cost \$11,112, and the water supply, sewerage, etc. \$33,298.

The estimates are for the cost, exclusive of the land, of a plant capable of making 6,000 tons per year, of nickel steel, face-hardened, reformed armour. As the size of the largest single armour plate to be produced fixes the size and number of melting furnaces required and the size of forging and bending presses, which are about the most expensive parts of the plant, and as the melting furnaces and presses, thus determined, are capable of producing a much greater quantity of armour, it follows that the cost of a plant of increased or diminished capacity will not be in direct proportion to the greater or less output, but will be in proportion to the greater or less number of cementing furnaces and machine tools supplied.

These estimates are made without exact knowledge of the local conditions of the site that may be selected. No freight is included, and the foundations for buildings and tools are of sufficient depth to secure stability and permanence on good hard pan or gravel only. Nothing has been included for grading or for

excavating except so far as necessary for the proper construction of the plant. Should the site selected be of such a character as to require piling or deeper foundations than herein contemplated, the cost may be increased. Five per cent. has been allowed, however, for erecting and engineering expenses, and it is thought that 5 per cent. additional allowance would cover all contingencies under the worst conditions that may be encountered.

A plant capable of producing the steel costs \$519,133 more than one designed to procure the ingots by purchase, but it has certain advantages which are enumerated. The ingots will be of uniform quality and excellence, can be produced as needed and without delay, and will cost nothing for transportation. The Government can also take advantage of any improvement in steel making processes, and can have a larger choice of sites, as the plant will not need to be located in a steel producing district.

The disadvantages of such a plant, the avoiding of which may be regarded also as the advantages of a plant designed to purchase the ingots, are: greater first cost and greater force of labour. The Board consider that the capacity to produce the steel ingots is so important to the successful and economic administration of an armour factory, that it does not recommend an establishment designed to obtain the ingots by purchase. A casting department for the moulds, anvils, and such castings as need occasional replacement, is necessary in either case and can be profitably combined with an open hearth steel plants herein outlined. In view of the advantages above mentioned, and notwithstanding the greater first cost of the establishment, the Board recommend that the Government armour factory include a plant for the production of open hearth steel ingots.

The Board learned that changes in the methods of manufacture, not fully known in this country, have been introduced abroad which greatly improve the ballistic properties of plates. The Board had also obtained some knowledge of an experimental armour plate, in process of making in this country by a method quite different from the Harveyized cementation process, from which the manufacturers seem to expect good results. These facts are mentioned to show that an armour plant must be capable of change or expansion to suit the introduction of new improvements. Private firms engaged in this industry and zealously guarding the reputation of their products, both at home and abroad, may readily obtain by purchase, the secrets and patent rights of new improvements, and their experts are constantly studying how to improve the quality of their plates and are assiduously experimenting to prove the value of new ideas. From an economical point of view alone, this ability to produce as good as the best is very essential to the success of a Government armour factory.

The establishment of a proving ground for testing armour plates at or near the site of the proposed armour factory is recommended by the Board.

As to the practicability of the scheme of a Government armour factory, the Board say:—

1.—An armour factory comprises essentially a collection of special furnaces, heavy machine tools and appliances that are not needed in any other class of work, and a class of labour specially skilled in the business.

2.—A Government armour factory not connected with an establishment engaged in other branches of the steel industry would depend for its success and economic administration upon a constant demand for an output nearly approaching its full capacity.

3.—If the Government should establish an armour factory, the efficient and economic maintenance or working of that factory would necessarily depend upon a constant yearly appropriation for ships to be provided with armour, because the armour produced at any time must be specially designed for and fitted to those ships. Any failure to appropriate for such ships in any one year would require the cessation of work and the laying off, indefinitely, of the skilled experts and

labourers that had been trained to this industry. A resumption of work at a later period would require the training, at a considerable expense, of a new set of men. In the meantime the progress of the art would perhaps have been such that difficult and radical changes would be required, which under continuous working might have been gradually and easily made.

The members of the Board are:—Commodore J. A. Howell, president; Captain A. H. McCormick, Civil Engineer Mordecai T. Endicott, Chief Engineer James H. Perry, Lieutenant J. F. Fletcher; Lieutenant W. Irving Chambers, Recorder.

*Report of the Dry Dock Board.*—In order to place the Naval Service upon a footing equal to that of foreign nations, the United States will have to spend nearly \$11,000,000 in the construction of additional dry docks. \*

This, at least, is the finding of the Board, consisting of Rear-Admiral F. M. Bunce, Commander F. E. Chadwick, and Assistant Naval Constructor R. B. Dashiell, appointed by Assistant Secretary Roosevelt to report upon the needs of the Navy with reference to docks. The Board find that docks should be immediately built at these points: At Boston, one concrete dock, 700 feet long, \$1,500,000; at New York, one concrete dock, 500 feet long, \$1,200,000; at Norfolk and Mare Island, one concrete dock, 500 feet long, \$1,100,000; at Port Royal, improvements, \$25,000; at New Orleans, floating and graving dock, \$750,000. Total, \$5,675,000.

In addition to the docks urgently needed, the Board recommend that structures be built at these places: At New London, fresh water basin, with dock, \$1,000,000; at Newport News, a steel floating and graving dock, \$650,000; at Tortugas, a steel floating and graving dock, \$650,000; at San Francisco, concrete dock at Yerba Buena, \$1,500,000; at San Pedro, concrete dock, 700 feet in length, \$1,500,000.

Referring to the points most likely to be attacked in case of war, the report states:—"On the Atlantic coast the points most likely to be attacked by an enemy are Massachusetts Bay, Long Island Sound, and New York and Chesapeake Bays. These positions, strategically important for the naval defence, and which should be strongly held, are the harbours at and on their approaches, which are Portland, Maine; Provincetown, Mass.; the eastern entrance to Long Island Sound, Sandy Hook at the entrance to New York Bay and the Cape Henry Channel. The entrance to the Delaware Bay and to Port Royal Sound should also be secure from occupancy. On the Gulf coast the attack will be from the Florida or Yucatan Channel, and the natural defence will be on the line from Tortugas and Key West. On the Pacific coast the positions of utmost importance are Puget Sound, San Francisco Bay, and, contingent on its completion, the project at San Pedro.

"We are, from a naval point of view, weak in comparison with the great naval Powers of Europe; and the naval strength of Japan is growing so rapidly that within a year or two she will also overmatch us in available strength in the Pacific. Every effort is then necessary on our part to at least retain command of the sea on our own coasts, and to supplement our naval strength by providing accessible places for repair and docking, and by fortifications so located that when our squadrons are pressed by a superior force they may use them as supports in holding the approaches to our coasts. So long as an enemy is compelled to draw all of his supplies from his home stations his operations must be limited by the necessity of holding his communications clear and the quantity of supplies he can transport in his ships under the protection of his fleets. If he must be prepared to meet upon arrival on our coasts even a much weaker naval force, held compactly in hand, with repair and supply facilities near, we can retain the command of the sea on our coasts, and render impossible its occupation near our commercial centres.

The dry docks at Boston, New York, etc., should be concrete graving structures, each 500 feet in length on the blocks, 90 feet wide on the sill, with a

depth of 30 feet over the sill and blocks at mean high water. Such a dock should be located at New York, between the present stone dock No. 2, the sawmill building being removed to make room. The sides of the entrance should be vertical, with sliding caisson withdrawing into a special pocket on one side."

In regard to the cost of construction, the Board said that it would appear that the cost of a steel floating dock and a timber graving dock of equal capacities would be nearly equal, but that the time of construction is in favour of the steel dock in the ratio of about seven to twelve. The concrete dock, under the same conditions as the timber dock, would cost from 50 to 75 per cent. more, and the time of construction would be 50 per cent. greater. In the opinion of the Board the cost of a granite dock would be about double that of a concrete dock. For all the docks a depth of 30 feet is suggested over the sill as being in all probability the maximum draught of any vessel, even in the out-of-trim condition produced by collision, accident, explosion, or gunpowder.

In conclusion, the Board express the conviction that all Government docks should be of a permanent character, and their readiness for use at all times be assured at any cost.

Want of space has hitherto prevented any notice being given to the Holland submarine torpedo-boat "Plunger," which was launched last autumn from the yard of the Columbian Iron Works, Baltimore, Md., on August 7th. Her length is 85 feet, and diameter 11.5 feet. Her displacement when floating light is 155 tons, and when down to her load water-line the displacement is 160 tons. Two sets of motive power are provided, one for the afloat and awash condition, and one for the submerged condition. Twin quadruple-expansion engines, with steam furnished from a water-tube boiler, will operate twin screws from afloat or awash, and a 70-H.P. motor, fed from forty-eight chloride cells, will furnish the power when submerged. The steam power, electric dynamo, and storage cells are so connected as to be readily reversible in their action, thus rendering it possible to recharge the cells from the dynamo, the steam engine being used as a prime motor. The electric power may also be connected to a propeller shaft placed in the axis of the boat, in addition to the connection with the main propeller shafts. The motor may thus operate a special propeller, in addition to driving the main shafts independently of the steam engines. The capacity of the storage cells is amply large to prevent injury or deterioration while giving off the power required to propel the vessel—a speed of about 8 knots for at least six hours. It is confidently predicted that the vessel will reach a speed of 16 knots in the light conditions, while she will be able to reach 15 knots with 3 feet of water covering the hull, while not less than 8 knots while submerged will be acceptable. At these speeds an endurance of 15 hours awash and 10 hours submerged is anticipated. She will carry no guns or other armament except five automobile torpedoes to be launched from two expulsion tubes. Two additional torpedoes can be carried, if desired.

The trial trip of the torpedo-boat "Winslow," built by the Columbian Iron Works, of Baltimore, has been a decided success. The trial Board was as follows:—Captain Frederick Rogers, president; Commanders William H. Brownson and William H. Emery, Chief Engineer Roekler and Naval Constructor J. R. Hanscom. The contract required the boat to make 24½ knots an hour on a trial run of two consecutive hours. She accomplished the test with 24.8 knots to her credit, leaving, as one of her critics expressed it, a safe margin by which her speed is to be computed. The speed at which the boat went over the course was at the rate of an ordinary railroad train, and was exactly 28½ land miles an hour. Lieutenant John B. Bernadon, who is to command the "Winslow" when she goes into commission, is enthusiastic in her praise. The highest speed she made on the run was 25.2 knots, while she was on the first half of the course, with a strong wind in her teeth. She did not seem to be affected by the conditions of the sea, and made her speed apparently independent of them.—*Army and Navy Journal*.

## MILITARY NOTES.

### PRINCIPAL APPOINTMENTS AND PROMOTIONS DURING DECEMBER, 1897.

General A. A. Bayly, R.A. (late Bombay), Lieut.-General Sir H. Brackenbury, K.C.B., K.C.S.I., R.A., and Lieut.-General Sir R. J. Hay, K.C.B., R.A. (retired), to be Colonels-Commandant, Royal Artillery; Major-General A. G. Ross, C.B., Indian Staff Corps, to be Lieut.-General. Colonels E. P. Leach, V.C., C.B., R.E., H. C. A. Szezopanski, Indian Staff Corps, J. Gatacre, C.B., Indian Staff Corps, and R. G. Woodthorpe, C.B., Indian Army, to be Major-Generals; Surgeon-Major-General J. Jameson, M.D., C.B., Director-General Army Medical Department, to be Hon. Surgeon to the Queen; Surgeon-Colonel G. Bainbridge, M.D., Indian Medical Service, to be Surgeon-Major-General.

HOME—From 1816 to 1829 recruits for the British Army had the option of enlisting for either limited or unlimited service. From 1806 to 1808 Mr. Wyndham's scheme of limited service was in force, which divided the total service into three periods,<sup>1</sup> of 7 years each, or 21 in all, for the infantry; of 10, 7, and 7 years, or 24 in all, for the cavalry; and 12, 5, and 5 years, or 22 in all, for the artillery. A man could claim his discharge at the end of the first period without pension. He might claim his discharge at the end of the second period with a pension of fivepence a day for life. At the end of the third period he was discharged with a pension of one shilling a day for life. If he claimed his discharge before the expiration of the third period he was liable to be called upon to serve in an emergency, but after the third period he was free. The Duke of Portland's Ministry held, as the duke himself did,<sup>2</sup> a very decided opinion that Mr. Wyndham's measure was extremely injurious. Their remedy was not its absolute repeal; but when the Mutiny Bill was before the Commons on March 7th, 1808, Lord Castlereagh moved to insert a clause to enable soldiers to enlist for life, urging upon the House that "he had no objection to limited service, and he had formerly promoted, to a certain extent, engagements limited in space as well as in time. But why should limited service be in a manner enforced to the total exclusion of unlimited service, even when the men were perfectly satisfied and desirous to enter without limitation?"<sup>3</sup> The clause was adopted, and from that year until 1829 the soldier had the option of enlisting either for life or for a term of years. A small additional bounty induced the men generally to enlist for life. In 1819 the difference of only sixteen shillings in the bounty induced recruits to select unlimited service. Of 2,483 men enlisted in the London and Dublin districts that year, only 13 were for limited service.<sup>4</sup> Limited enlistments were wholly discontinued by order of the Adjutant-General, dated 18th April, 1829.

This was the aspect in which the matter stood in 1847, when Parliament again interfered with enlistment, and obliged the Crown to enlist all men for a limited period. The period of service in the infantry was fixed at ten years, with permission to re-engage for another eleven years.<sup>5</sup>

<sup>1</sup> Clode's "Military Forces of the Crown," Vol. II., p. 286.

<sup>2</sup> "Castlereagh Despatches," Vol. III., p. 159.

<sup>3</sup> Hansard's Parliamentary Debates.

<sup>4</sup> Marshall's "Military Miscellany," pp. 74, 75.

<sup>5</sup> 10 and 11 Vict., c. 37.



The exigencies of the Crimean War compelled Parliament to again resort to short engagements, and the provisions of 10 and 11 Vict., c. 37, had to be relaxed to give authority to the Crown to enlist or re-engage men for shorter periods than ten and eleven years. This was done by the 18 Vict., c. 4, in the first instance; but the power was continued in force for six years by the 21 and 22 Vict., c. 55.<sup>1</sup> Had the extra men required during the war been enlisted for long service, they would have proved an unnecessary burden to the country on peace being made. High bounties<sup>2</sup> were, of course, necessary for ordinary recruits and volunteers from the Militia; but short service, even with high bounties, was cheaper; and short service, consequently, was adopted. The number of recruits was, even then, insufficient, and it was necessary during the Crimean War, as during all our great wars, to employ foreign mercenaries, and a force known as the British-German, British-Italian, and British-Swiss Legions was raised.<sup>3</sup> It was, it is true, but a comparatively small force, and is the last that can be employed by England.

And, finally, the authorities had, as had always been the case in time of trouble, to rely largely upon the Militia. That force was embodied in 1854, and remained on permanent duty till the peace in 1856. The Queen was enabled to accept the voluntary service of the force out of the United Kingdom for the vigorous prosecution of the war.<sup>4</sup> The places to which their services were extended were Gibraltar, Malta, and the Ionian Islands. Fifty regiments of Militia, representing a force of 48,936 men, exclusive of officers and non-commissioned officers, volunteered for foreign service during the war.<sup>5</sup> In addition to the assistance obtained in this manner, the authorities obtained its best recruits from the Militia. The regulations under which Militiamen were invited to volunteer into the Regular Army were embodied in a War Office circular of 20th December, 1854. A bounty of £7 was offered to each man, and an ensigncy in the Line without purchase was given for the first seventy-five men volunteering from each regiment; another for the second seventy-five, and a third commission for the third seventy-five. Under these conditions 32,000 men volunteered from the ranks of the Militia to the Regular Army during the war.<sup>6</sup>

The strain occasioned by the Crimean War was continued after its close during the campaigns consequent on the Indian Mutiny, 1857-59, and the Chinese War of 1860. From this date to the year 1872 the period was one of transition. There was a serious deficiency of recruits, which was particularly shown after 1860.

During the five years 1859 to 1863 the Army was on the average 11,000 below establishment. The additional 65,000 men sanctioned for the Army in 1857 had not been raised in 1861, in spite of the reduction of the standard, etc.<sup>7</sup> The standard of height was 5 feet 3 inches— $\frac{1}{2}$  inch lower than at present—while there existed no standard for chest measurement, which is in reality much more important than height. A Royal Commission was appointed in 1866, the second, be it noted, which had been assembled in five years, in consequence of the failure in recruiting under the old system.

The Recruiting Commissioners in 1866 recommended the offering of greater inducements for men to re-engage.<sup>8</sup> "No doubt the expense of an Army constituted

<sup>1</sup> Clode. Vol. II., p. 30.

<sup>2</sup> In 1855 the bounty was £8 for the infantry, £9 for the Royal Marines, and £10 for the artillery.—R. H.

<sup>3</sup> 18 Vict., c. 2.

<sup>4</sup> 18 Vict., c. 1.

<sup>5</sup> "History of the 3rd and 4th Bns. Worcestershire Regiment," by Captain R. Holden, pp. 194, 195.

<sup>6</sup> "History of the 3rd and 4th Bns. Worcestershire Regiment," pp. 196, 197.

<sup>7</sup> Report of the Royal Commission of 1861, p. iii.

<sup>8</sup> Report on Recruiting, 1867.

of re-engaged men is vastly in excess of an Army of recruits, and doubts appear to be entertained whether, as a rule, it is more, if indeed as effective as an Army of younger men."<sup>1</sup> The 10 & 11 Vic., c. 37, was therefore repealed—save as to soldiers enlisted under it—by the Army Enlistment Act, 1867, which sanctioned re-enlistment for twenty-one years at any time that two-thirds of the first term of enlistment has been served out, and provides that all future enlistments shall be made for the longer period of twelve years. The number of re-engaged men on 30th June, 1867, was 31,205, and from that date to 31st December, 1868, a further number of 40,988 men re-engaged under the Act of 1867, making a total of 72,193 long-service men working for future pension.<sup>2</sup>

Before 1866 it had been rather the fashion to look to France for all that was to be learnt in military science, but it was now realised that once again Prussia had definitely taken the lead. The Schleswig-Holstein war gave her Army, not yet entirely re-formed since 1859, the opportunity of testing its worth on the battle-fields of Denmark. It was here that the needle-gun made itself heard and felt, and a distinctly short service Army for the first time gave ample proofs of its prowess. The details of the Prussian organisation were perhaps not much studied popularly at the time, but it was at least well understood that the Prussian "young soldiers" had done everything required of them—and that, moreover, in a rigorous winter campaign. As a matter of fact, when compared with their subsequent wars, the Prussians fought that of 1864 with an abnormal proportion of young men; for they took the field with a force made up in the proportion of three years' quotas of young soldiers to two years' quotas of reservists; the normal state of things being that the three years' young soldiers are balanced by four years' quotas of reservemen. In effect the Schleswig-Holstein war gave rise in England to a somewhat painful feeling of soreness and weakness. In 1866 the success of the Prussian Army in the short Seven Weeks' War startled and electrified Europe. The chief factor in this success was felt to be the breech-loading rifle, with which the Prussian infantry was armed, and every country now hastened to supply itself with such a weapon. But it was not only the use of the breech-loader which caused the whole civilised world to have its attention absorbed in military affairs to a degree hitherto unknown in history. The rapidity of the mobilisation of the Prussian Army, its completeness in practical detail, the force and deadly precision of its blows, crowned with such speedy and brilliant success at Sadowa, brought home for the first time the conviction that it was possible for a nation to have an Army numerically small on the peace establishment, yet capable of expansion at the shortest notice to many times that strength. It was then realised that in the wars of the future the decisive blow was to be expected at an unprecedentedly early moment, that campaigns would be short, and that it behoved every country exposed to attack to look to its readiness for putting its whole defensive force into the field from the very outset. The system under which the Prussian Army on its peace footing was made up to the war complement, complete in every particular by the incorporation of its reserves, was now carefully studied, and with all the greater encouragement from its being well known that Prussia was a poor country bound to a rigid economy.<sup>3</sup>

It was these important considerations, coupled with the failure of recruiting under the old system, which induced Mr. Cardwell, the Minister who held office during the eventful period 1868-74, to apply the "modern system" to the British Army. The present short-service system was introduced in 1870. It aimed at:—1. Improving the social position of the soldier. 2. Mobilising the Active and Reserve forces. 3. Popularising the Army. 4. Forming an efficient Reserve. A recruit was not to engage for more than 12 years, and might engage to serve the whole time with the colours, or part of the time

<sup>1</sup> Clode, Vol. II., p. 31.

<sup>2</sup> Clode, Vol. II., p. 32.

<sup>3</sup> The "Army Book for the British Empire," p. 44, etc.

with the colours and part in the Army Reserve. Thus a man might enlist for three years with the colours and nine years in the Reserve, or for seven years with the colours and five in the Reserve. Finally, on 16th February, 1872, there was laid on the table of the House a memorandum which laid down the plan on which the organisation of the land forces should be effected, together with the report of a committee<sup>1</sup> which had elaborated the details involved. The essence of the Act of 1870 is in effect the basis of the law under which the Army is at present administered.

It was the intention of the writer of these notes to give the standard of height, etc., at various periods, but not till 1879 were standard measurements made a part of the medical examination of recruits. Prior to that, measurements were a part of the military examination, and were almost entirely in the hands of the recruiters, who had a direct pecuniary interest in getting men through. Statistics collected prior to 1879 have, therefore, no scientific value for anthropological comparison.

The newly-raised 3rd Battalion Coldstream Guards practically came into existence on 1st December, when nine officers and 213 warrant and non-commissioned officers and men, under the command of Lieut.-Colonel V. J. Dawson, moved from the Tower and Windsor by rail to Woolwich, and took up their quarters in the Cambridge Barracks. Steps are being taken to raise a third battalion to the Scots Guards, and, finally, to facilitate recruiting for the brigade it has been notified that men now serving in the brigade who, on completing three years' service with the colours, are willing to complete seven years with the colours, and those enlisted for seven years with the colours, who are willing to complete twelve years with the colours, will receive a bounty of £2. Permission will also be given to a limited number of men in the Army Reserve of the Guards to rejoin the colours, without refunding their deferred pay, and they will resume their good-conduct badges and rank. When a similar invitation was recently given to the Reserve men of the Guards to rejoin the colours on the same conditions, the response was not satisfactory.

The demand of Major-General Sir H. Kitchener, Sirdar of the Egyptian Army, for British troops to proceed to the Soudan, has necessitated a considerable alteration in the distribution of the Army. The 1st Battalions of the Royal Warwickshire and Lincolnshire Regiments, with a section of the Royal Engineers, from Alexandria and Cairo, have already been placed at the disposal of the Sirdar, and will proceed to the front; and it is probable that the 21st Lancers and the 1st Battalion Cameron Highlanders will follow them. In the meantime the British Force in Egypt will be increased by the 3rd Hussars from Shorncliffe, the 56th Field Battery R.A., from Aldershot, and two others, the 1st Grenadier Guards, and the 1st Battalion Northumberland Fusiliers from Gibraltar, the 1st Battalion Seaforth Highlanders from Malta, with two other Mediterranean battalions, and the 1st Battalion Royal Irish Fusiliers from Burma, and the 2nd Battalion Lancashire Fusiliers from Quetta. Colonel (temporary Major-General) W. F. Gatacre, C.B., D.S.O., commanding the 3rd Infantry Brigade, Aldershot District, has proceeded to Egypt to assume command of the British Brigade at the front.

Regimental magazines have in recent years become an established institution in the Army; and to them is due, in a very great measure, the renewed interest which is being taken by all ranks in regimental tradition and history, and the revival of *esprit de corps*. The Brigade of Guards have been the pioneers in this class of literature. From 1864 to 1875 the late Mr. I. E. A. Dolby edited, with painstaking care, the "Journal of the Household Brigade," which was devoted to the sayings and doings of the Household Cavalry and Foot Guards. On his death, no one volunteering to carry on the venture, it

<sup>1</sup> The "Localisation Committee," presided over by Major-General Sir P. L. Macdougall.

ceased to exist; but, in 1888, Colonel the Hon. H. F. Eaton, of the Grenadier Guards, revived it as the "Brigade of Guards' Magazine." In this form it continued until last year, when it was again threatened with extinction; but it is satisfactory to find that it has not only survived, but entered upon a new and more vigorous existence. To Major Eyre Crabbe and Captain George C. Nugent, of the Grenadier Guards, all ranks of the Brigade are indebted for the care with which it has since been carried on, and for the new life and vigour which has been infused into it. From the 1st January the magazine appears in its original character as the mouthpiece of the Household Brigade—Life Guards, Blues, and Foot Guards—and no doubt it will receive the encouragement from all ranks which it deserves. It contains much that is interesting and instructive, and much that is amusing and humorous, as might have been expected from a venture with which Captain Nugent has connected himself, and to the pages of which his father, Sir Edmund Nugent, also an old Grenadier, is a humorous contributor.

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Classes for the instruction of officers and non-commissioned officers of the Regular Forces will be formed at the School of Musketry, Hythe, on May 3rd, July 26th, and October 25th. Classes for officers of Militia battalions and the permanent staff of Auxiliary forces will be held from March 1st to 28th, and September 24th to October 21st. There will also be a class for officers of the Yeomanry Cavalry and Volunteers from April 5th to the 27th.

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The following changes are ordered to be carried out early in 1898:—5th Lancers, from India to Natal; 9th Lancers, from Natal to India; 1st Bn. Lincolnshire Regiment, from Egypt to India; 1st Bn. West Yorkshire Regiment, from Hong-Kong to Singapore; 2nd Bn. Lancashire Fusiliers, from India to Malta (since detained in Egypt); 2nd Bn. Royal Berkshire Regiment, from England to South Africa; 1st Bn. Middlesex Regiment, from South Africa to India; 1st Bn. Highland Light Infantry, from Malta to England; 1st Bn. Royal Irish Fusiliers, from India to Egypt.

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The 27th (1st Baluch Bn.) of Bombay (Light) Infantry, which left Bombay on the 4th December for Mombassa, East Africa, was at Rawal Pindi in the Reserve Brigade of the Tirah Expeditionary Force. From Mombassa the regiment will be railed inland 120 or 130 miles over the Uganda railway, but it will still have a 500-mile march before it if it is to proceed to Usoga, where the mutiny occurred amongst the Soudanese troops of Major Macdonald, R.E. This will take a month, and consequently Major Macdonald cannot hope to get reinforcements until the third week in January at the earliest. The battalion, which is commanded by Lieut.-Colonel W. A. Broome, was raised in 1844, and fought during the Indian Mutiny, in the Abyssinian Campaign, the Afghan War, and in Burma. The uniform is dark green with scarlet facings, and red trousers; and the luggree is dark green with shamla and red kullah. It is composed of four companies of North-West Frontier Pathans, two companies of Hill Baluchis (including all Baluchis of Derejat), and two companies of Punjabi Mahomedans. It has some Afridi and Orakzai in the ranks, and it was doubtful policy employing it with the Tirah force.

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The Colonial force at present maintained in the Gold Coast Colony is an armed constabulary composed of Hausas. The present establishment is 20 European officers—officers of the Imperial Regular Army and Militia seconded in their regiments for service under the Colonial Office—10 Native officers, 80 non-commissioned officers, and 1,000 privates, but it is in contemplation to increase it by another 1,000 men. The organisation is military, and the force is available for service in any of the British West African Colonies. It is divided into artillery and infantry, the former armed with sixteen 7-pounder R.M.L. guns, six Maxim,

three Nordenfeldt, and one Gatling machine gun. The infantry are armed with Lee-Metford carbines and sword-bayonets. There is a small Volunteer force, known as the Gold Coast Rifle Volunteers, the establishment of which is 11 officers, 36 non-commissioned officers, and 350 privates. The corps is armed with Martini-Henry carbines and sword-bayonets, and divided into two detachments, 230 at Accra and 120 at Cape Coast. There is also in the Colony a Civil Police Force, composed of Fantees, numbering 450, which it is proposed to increase to 500 men. The Hausa Constabulary Force was raised by Captain (afterwards Sir) J. H. Glover, R.N., and Mr. (now Sir) Roger Goldsworthy, for service in the Ashanti war of 1873-74, and was known as Glover's Hausas.

The Colonial armed force maintained in the colony of Lagos is a Military Constabulary of 844 men, Hausas, and a Civil Police Force of 329 men. The Hausa force is armed with the Martini-Metford carbine, and the Civil Police with Snider rifles. The European officers are obtained chiefly from the Imperial Regular Army and Militia. In addition, there is the new Yoruba battalion, which is being recruited at Lagos to the strength of 1,000.

Sierra Leone maintains an armed Police Force, specially organised for frontier work, and officered almost entirely by Militia officers from home.

Major F. B. Longe, R.E., and Major T. F. B. Renny-Tailyour, R.E., have been selected for the charge of the survey parties in connection with the Burma-China Frontier Demarcation Commission. The work of the Commission is, this winter, to be confined to the frontier extending from the extreme northern point in latitude 26° 35' to the Kunlow Ferry. The time within which the whole of the demarcation must be carried out is fixed under the Anglo-Chinese agreement of February last at three years from the date of assembly of the joint Commissions.

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AUSTRIA-HUNGARY.—Field-Marshal Zsoldos, and Field-Marshal Kropatschek, Inspector-General of Artillery, representing the Ministry of War, entertained a distinguished company at Felixdorf on the 2nd December, to view an improved Uchatius gun and experiments therewith. Among those present were many members of the Hungarian Delegation, members of the Gunnery Commission, and officers of the general staff. Field-Marshal Kropatschek gave an address, and explained recent improvements in artillery, and the several changes which had been effected in the Uchatius gun. This gun has been converted into a quick-firer, fitted with a brake, which runs the gun up after recoil, and so saves time in loading. The vent has been so secured that the gun cannot be prematurely fired, and the uncapping takes place automatically. Both the old and the improved pattern were fired, ten rounds each, at a range of two thousand paces, the former occupying three minutes and thirty-three seconds, and the latter just under two minutes.—*Militär-Zeitung*.

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FRANCE.—The recent debarkation of Greek troops in Crete, the blockade of that island, and the threat of a still more strict blockade of the Piræus by the international fleet, says the *Revue du Cercle Militaire*, teach us valuable lessons. They show that we should carefully provide for the defence of our sea frontiers. The Chino-Japanese war had already given us food for reflection. The sudden invasion by the Japanese and their prompt successes were due to debarkations which were ably conceived and boldly executed; but instead of taking warning we merely remark that French soldiers are different from Chinese, and with that comforting assurance we continue to indulge in a false security. The military authority cannot alone cope with this question, and in France the reform of existing systems, or the introduction of any new organisation, is attended with difficulty and delay. Many of our politicians question the need for expenditure on coast defences as well as on ships-



of-war. Other nations are, however, of a different opinion. England, Italy, and Germany are several years in advance of us, and set us an example, in the matter of coast defence. Although an attempt was made by means of the decree of 17th February, 1894, to provide for this, the dual arrangements of the naval and military ministries are complicated and unsatisfactory. In the next war, its theatre will be not only on land but on the sea and on our sea coasts; and as our fleet is not strong enough both to fight at sea and guard the coast; should we not fear lest our dock-yards and harbours may be reduced to heaps of ruins? If, for instance, one or two army corps were debarked on our soil at a time when all our land forces were concentrated on the Vosges and the Alps, the result would be to divide our strength and absorb the supplies on which Paris would depend for its existence. The whole district between Paris and La Manche is rich in produce, and it is on the opposite side of the country to that traversed by our mobilised armies. Paris would, therefore, depend on it for supplies, but the destruction or occupation of Havre, or the incursions of an enemy into Normandy, would compromise the food supply. The entrenched camp of Paris would require for its 3,000,000 mouths 1,500,000 kilogrammes of bread per day—equal to 360,000 cwts. of flour per month, or 2,160,000 cwts. of flour for six months. For a siege of six months there would also be required 732,000 oxen and 4,223,076 sheep. Dependence should not be placed on preserved meats, which are productive of disease. A permanent consultative committee on provisions was formed in 1889, and the quantity of victuals to be brought into Paris in case of war is known and fixed; but whence are these to be drawn? Certainly not from the north, nor from the east, nor from the south-east, which will all be occupied or traversed by our armies, and consequently be unable to supply the wants of Paris. The central, western, and south-western regions of France may be available, but while rendering this service they must be protected against invasion. To collect the necessary quantities of corn and cattle in depôts to await transport would require several days—how many it is difficult to say, because after contracts had been made, the mobilisation would probably withdraw the greater part of the men and horses from civil employment. The next difficulty is that of transport from the depôts to Paris. This would require 169,164 trucks, making 3,750 trains, and it would be difficult to find so many trucks and engines to draw them. Taking the highest number of trains practicable when all works smoothly from beginning to end, namely, five in the hour or 120 in twenty-four hours, it would be thirty-two days before Paris could be provisioned by the agency of one railway company, and if three companies undertook the work it would be done in proportionately less time. It is, however, found in practice that to keep up the above number of trains is impossible, and that one-fourth of that daily number is nearer the mark, large margins being required for delay and contingencies. It may therefore be safe to say that if three railways were employed in provisioning Paris the work might be accomplished in forty-four days, but all this would be utterly impossible during a concentration of armies, when, of course, troops must be pushed on whatever trains are left behind, and so if Paris is not supplied before mobilisation it must wait for about a fortnight—until the confusion is over. Then it may be done if the southern and western region remain open for two months after a declaration of war, but if not it cannot. It is probable that we should soon be largely dependent on seaborne provisions, not only for Paris, but for the Army and the nation. This shows the imperative necessity of preventing the enemy from destroying or blockading our ports, or even of attempting to land on our shores. The defence of our coasts cannot be too urgently and persistently advocated.

The Minister of War has decided on the abolition of the present forms of shelter-tent, and the introduction of a new pattern. This will gradually take the place of the old patterns as the stock of the latter in store becomes exhausted. The material of the improved *tente-abri* is ordinary cotton, stained and water-

proofed; the supports are of bamboo, in four lengths, each end being strengthened with brass fittings. The pickets are of mild steel, in the form of a screw tapering to a point, and the ropes are of the best French hemp. The sides of the tent are 1.60 metres in length, and the weight of the whole complete is 1 kilogramme 76 grammes. This is 464 grammes higher than the Waldéjo tent hitherto used in the Service.—*Revue du Cercle Militaire*.

Alsace and Lorraine were described by Napoleon I. as the "nurseries of valiant soldiers," and to this day there are no districts of France, with the exception of Paris itself, that furnish so many officers to the Army and Navy. There are at present, including reserve and pensioned generals, 130 generals of division or brigade from these provinces, also two members of the Superior Council of War, and six commanders of army corps. They have given to France the names of Ney, Kellermann, Lefebvre, Victor, Gérard, Oudinot, Exelmans, Kléber, Richepanse, Rapp, Lasalle, Drouot, Senarmont, and Éblé; and during the last century the number of admirals and generals has amounted to 500.—*Militär-Zeitung*.

RUSSIA.—General Dragomiroff has been exercising the troops under his command in the tactics of the three arms. A company of fifty files was ordered to fire on two batteries, represented by dummies, at distances of 840 and 500 saschen respectively (saschen being 2.13 metres). The firing was to continue for three minutes, and the distance was unknown to the company. At the first-named distance twelve volleys were fired, in all 1,296 rounds, resulting in ten men of the battery being hit. At the second distance ten volleys consisting of 1,080 rounds were fired and twenty men were hit. A battery was then ordered to fire, at the same distances, on two half companies, made up of a hundred dummies in single rank with intervals of a quarter of a pace. At the first distance (840 saschen) forty-six shells were fired in three minutes, ninety dummies being hit, the number of hits being in all 335. At the second distance sixty-four rounds were fired in 3½ minutes, ninety-seven dummies were hit, the number of hits being 718. An attack was afterwards ordered on a battery and a troop of cavalry represented by dummies; but the number of hits was almost nil, and the cavalry and artillery did not keep up the required combination.—*Militär-Zeitung*.

The Russian Militia is called out for training once a year for a period of four weeks, and the authorities choose the season of the year when the men can best be spared from their ordinary employment. The Militiamen are housed in the barracks of the Government district in which they train, or in buildings taken over for the purpose, and it is seldom that they are lodged with the inhabitants. Their rooms contain the necessary camp furniture, but many of the men, as is usual with Russians on a journey, carry with them their own mattresses and pillows. They receive two hot meals daily, each man having at least 200 grammes of meat and 1,200 grammes of bread; also tea, either every day or several times a week. The men wear their own clothes during the training, which has not the best effect from a military point of view, and sometimes boots and greatcoats have to be served out from the stores to men who have none. The instruction is carried out under the orders of the commandants of the respective districts, assisted by officers of the Army and Militia, and consists chiefly of rifle and close order drill.—*Avenir Militaire*.

The Niemen, about two miles above Kovno, was crossed during some manoeuvres, by two Russian regiments of dragoons, the 8th Smolenski and the 9th Elisabethgrad. At ten o'clock in the morning a line of chasseurs-à-pied in skirmishing order, occupying the right bank, opened fire on the dragoon squadrons, which were approaching the left bank to cross the river at a point indicated.

The Smolenski dragoons, who were at the head of the column, immediately detached some dismounted men to line the left bank and silence the enemy's fire. According to the idea of the manoeuvres, the cavalry were to seize the boats necessary for the transport of arms and baggage, and these boats were on the right bank, and protected by the enemy's skirmishers. The scouts at the head of the regiment rapidly undressed, retaining only their sabres, and unsaddling their horses, with which they dashed into the river, swam across, covered by the fire of their skirmishers on the left bank. In two minutes and a quarter the leading men had crossed the Niemen, which is here over a furlong wide, and, charging the enemy, forced him to mount and retire. The captured boats were then despatched to the left bank, where they were loaded with clothing, equipment, arms, and ammunition. The men of the 8th Smolenski then swam the Niemen, while the horses, which made no difficulty about entering the water, were taken over in batches by such of the men as were specially good swimmers. The Elisabethgrads, headed by Colonel Zaroubine, chief of the staff of the 3rd Division of Cavalry, followed in similar fashion, the squadron officers also swimming across at the head of their men. The sappers of the engineer company stationed at Kovno then ferried across the ammunition wagons of both regiments on a couple of rafts made of light timber beams, thus completing the operation without accident of any kind, to the entire satisfaction of the commanding general. It only remains to add that eight rowing boats had been previously disposed across the river a little way down stream, so as to be able to render prompt aid in the event of anything going amiss during the passage of the river. However, they were only called upon to render a little assistance to a few of the troopers who got separated from their horses.—*La France Militaire*.

# NAVAL AND MILITARY CALENDAR.

DECEMBER, 1897.

- 1st (W). 3rd Bn. Coldstream Guards formed at Woolwich.
- " " Transport " Simla " left Southampton with drafts for Bombay.
- 3rd (F). A detachment of German Sailors and Marines took possession of the City of Kiao-Chow, China, 18 miles from the bay of that name.
- " " British force in the Masozai country, N.W. Frontier of India, broken up.
- " " H.M.S. " Venus " left for Mediterranean.
- 4th (Sat). Headquarters of Tirah Field Force reached Khanki Bazar.
- " " 27th Bombay N.I. left Bombay for Mombassa, East Africa.
- " " Treaty of Peace between Turkey and Greece signed.
- 5th (S). 15th, 21st, and 22nd Companies Eastern Dn. R.A. left Gibraltar for England.
- 6th (M). 600 German Sailors and Marines occupied the Port of Kiao-Chow, China.
- " " Headquarters of Tirah Field Force reached Shinwari.
- 7th (T). Headquarters of Tirah Field Force left Bagh for Datoi.
- " " Egyptian gun-boats made a reconnaissance as far as Metammeh, and captured six Dervish boats.
- 8th (W). H.M.S. " Tartar " paid off at Chatham from West Indies.
- 9th (Th). 1st Bn. Royal Welsh Fusiliers arrived at Devonport from Aden in the transport " Dilwara."
- " " Tirah Valley evacuated by the British Force.
- " " H.M. second-class cruiser " Vindictive " launched at Chatham.
- 10th (F). News received that Buna, British West Africa, had been occupied without opposition by colonial troops.
- " " 1st Bn. South Wales Borderers arrived at Bombay from Gibraltar in the transport " Nubia."
- 11th (Sat). Brigadier-General Kempster's rear guard cut off near Sherkal Camp.
- 16th (Th). Treaty of Peace between Turkey and Greece ratified by the Sultan.
- 17th (F). Peshawar column marched to Jamrud.
- " " H.M.S. " Porpoise " left for Australia.
- 18th (Sat). The complete submission of the insurgents in the Philippines was reported.
- 19th (S). Karsala handed over to the Egyptian troops by the Italians.
- " " Russians occupied Port Arthur as a naval station.
- " " H.M.S. " Cambrian " arrived Plymouth from Mediterranean.
- 20th (M). Egyptian troops captured Dervish fort of El Fasher.
- 21st (T). Publication in the *London Gazette* of the despatches of Major-General Yeatman-Biggs, C.B., regarding the action at the Ublan Pass on 27th August.
- " " Dervish fort at Osobri, the one important post between Kassala and Khartoum, captured by the Egyptian friendlies after an heroic defence.
- 22nd (W). H.M.S. " Alert " left for West Indies.
- 23rd (Th). Peshawar column occupied Ali Masjid.
- 25th (Sat). China Squadron, under Vice-Admiral Buller, anchored at Chemulpo to enforce demand on Korean Government for restoration of Mr. McLeavy Brown to Commissionership of Customs.
- " " H.M. ships " Immortalité " and " Iphigenia " anchored at Port Arthur.
- 26th (S). Fort at Lundi Kotal destroyed by British.
- 28th (T). News received that two towns in the Bariba country, British West Africa, had been occupied by the Lagos Constabulary.
- 30th (Th). H.M.S. " Nile " arrived at Plymouth from Mediterranean.

## FOREIGN PERIODICALS.

### NAVAL.

ARGENTINE REPUBLIC.—*Boletín del Centro Naval*. Buenos Aires : November, 1897. Has not yet been received.

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens*. No. 1. Pola and Vienna : January, 1898.—“On the Value of Artillery in Naval Battles.” “The Reform of Naval Schools in Austria-Hungary” (*continued*). “On Broad-side Submerged Torpedo-Tubes.” “The Catastrophe of the Steamer ‘Ika.’” “The Position of the Technical *Personnel* in Modern Navies.” “A New Sort of Collision ‘Mat.’” “The River Gun-boat ‘Sultan.’” “Accidents to Shipping in the Bosphorus.” “Foreign Naval Notes.” “Book Notices.”

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## NOTICES OF BOOKS.

*The Interest of America in Sea-Power—Present and Future.* By Captain A. T. MAHAN, D.C.L., LL.D., United States Navy.

An anomalous position now holds good: the true history of Great Britain's strength in maintaining her position as a Great Power is written by one who is not a subject of that country.

Captain A. T. Mahan, of the United States Navy, eight years ago, at one bound, captured the good opinion of students in this country by his admirable story of sea-power up to 1783. In the fulness of time the further developments during the Great War were traced with a master hand, and the master's zenith was then reached, as the Life of Farragut added nothing, and that of Nelson but little, to his fame.

Captain Mahan has now assembled, in one volume, eight essays on cognate subjects: they appeared successively during the past seven years in various American magazines. The preface, written in November, 1897, by its modesty and its truth, bids fair to disarm criticism; but the essays retain their dates, their obscurities, and their errors. In all the writings of the author passages occur, the construction of which is gravely unsatisfactory, and this volume of essays contains an undue proportion of awkward and ill-balanced phrases. The counterpoise, however, is heavy; many ideas are justly weighed, both concrete and accurate thoughts are brilliantly expressed. It is a crucial test for any article dealing with historical forecast to be re-published years after its birth: from the armoury of mouldy dissertation weapons are perennially pilfered, sometimes to be used with effect in the warfare of party politics; and a historian who prophesies future combinations from a fancied analogy in the past, gives hostages to cynics and to fortune. Thus it arises that early articles in this volume lie open to critical attack, against which the later ones are, to some extent, shielded by the fuller knowledge garnered from eventful years.

"The United States Looking Outward" dates from 1890, and was apparently written under the spectre of a junction canal between the oceans; but the omen is misread; it is to the last degree improbable that any ocean canal can be used in war; one daring man and a few pounds of explosive would wreck for weeks the labour of years, and a military or naval communicating channel liable to abrupt closure by insignificant means is not one that reason approves for such a purpose. On the other hand, free passage in peace of the enormous traffic inevitably developing between the eastern and the western sea-board of the United States would be a fertilising stream overleaping by far the beneficence of a harnessed Nile.

Captain Mahan commits himself to the statement that in the disagreement of views between his country and Great Britain regarding seal-hunting in Behring's Sea, the contention of the former is unimpeachable; but the book is published in 1897, and the author's unbiassed intellect at this date must assuredly shake his pristine confidence.

The matter contained in the Hawaii article is of first importance to both countries. Captain Mahan, with impeccable honesty, states the case for the annexation of the Sandwich Islands by the United States; his candour permits dissent from the logic of his conclusions. The islands are thousands of miles from San Francisco, and still further from Vancouver and Queensland; but America has no western colonies to which Hawaii could be a stepping-stone whilst it lies directly in the trade path between the two colonies; yet every

Briton can, with whole heart, endorse the author's opinion that a cordial "understanding between the two chief States of English tradition . . . would increase greatly the world's sum of happiness," and England assuredly will refrain from any action in this matter calculated to hamper free action for the American Senate. The contemplated, if not completed, annexation of an oversea territory forces the hand of the Government of the United States; now and henceforth she is a sea Power, her standard of strength or of weakness is for the decision of her own people.

The "elusive secret of the strait" that four hundred years ago baffled the pioneers of old Spain, still awaits solution by the engineers of to-day, and in the "Isthmus and Sea-Power," Captain Mahan describes Napoleon's "business of positions" with a skill worthy of the great strategist himself.

It is a genial task for a citizen of the United States to call Hallam to witness that the blundering capture of Jamaica by the Protector availed England more than the calculated triumphs of her kings. Cromwell's death abruptly dropped the curtain in the opening scene of Central American conquest, but whether the play in its entirety would have developed into drama, comedy, or tragedy remains a matter for speculation; yet for a century and a half neither the buccaneers nor Nelson succeeded in their attempts to permanently withdraw the veil from the route through Nicaragua. The author is surely mistaken in his idea that Great Britain would be hostile to the construction of a water thoroughfare, the Clayton-Bulwer Treaty notwithstanding, and the error is demonstrable on two unimpeachable reasons: first, had she the will, she probably lacks power to prevent it; and, second, an additional avenue of carrying trade and commerce would to some degree benefit her, whilst undeniably the benefit to the United States would be enormously greater; as a matter of fact, Lord Palmerston approved the idea of channelling the Isthmus in 1848, when Mr. Roebuck brought the scheme before him. The King of the Belgians was much interested in the matter; but money was not forthcoming, and the Panama disasters were postponed for a generation.

The value of an argument often lies in its application, and the "Anglo-American Reunion" indirectly covers the vexed question of the Treaty of Paris and its probable effect, but without specifying the details of treaty itself.

It was only at long intervals after the signatures were affixed to the document that its possible scope could be measured: the difficulties hang mainly on the meaning of contraband of war. We have seen rice, corn, and coal added to hemp, timber, flax, and tallow in that category, by at least one great maritime Power, without effective protest from another; and the controversy between Captain Mahan and other writers in the *North American Review* is somewhat academical. A nation will enforce its own decrees by its fighting power alone, and history is repetition.

One sentence in the "Future in Relation to American Naval Power," quoted from Washington, sums up the situation for all time:—"It is absurd to expect Governments to act upon disinterested motives"; and this is applicable even to the United States Government of to-day.

The author is scarcely justified in saying nations "do not practise in the pistol-range before sending a challenge"—his thesis is upset all the world over. Military manoeuvres in Germany, and naval evolutions in the Caribbean Sea are, in their essence, the very "practice" whose existence is denied.

British readers may smile at a comparison between the respective moralities of an earthquake and of the Egyptian occupation, but few will carp at the idea conveyed in the ensuing words:—"This action was justified by broad considerations of moral expediency, being to the benefit of the world at large, and of the people of Egypt in particular."

Captain Mahan here, as elsewhere, severely and justly condemns the effect of combined European conference on the terrible story of Armenia; but the withers



of our country are unwrung, and a sentence in his next article, "Preparedness for Naval War," adequately covers the ground as regards ourselves:—"On questions of material interest men may yield; on matters of principle they may be honestly in the wrong; but a conviction of right, even though mistaken, if yielded without contention, entails a deterioration of character, except in the presence of force demonstrably irresistible"; and therein lies the gist of the whole matter.

The reasoning powers of the author enable him to prick a bladder that is unduly prominent on our side of the water; the expenditure that this nation can bear for her chief arm of strength is actually limited, although the margins are wide in comparison with those available for a country fined, in malt and in meal, by the burden of manhood conscription. He puts aside as impossible the proposition that we should race in naval numbers against more than two combined competitors; there is real danger to any bull-frog who assumes to play the part of a more massive quadruped.

It is well to glide as lightly as we may over the still thorny ground of the Venezuelan question, but the author's assertion is indisputable, that in her views on this question America was an unsupported unit among the Great Powers, and the manner of her presentation of the case weighed perhaps as much as the matter with the unprejudiced.

The general principles of "Preparedness" are applicable to all peoples, and are worthy of study in the old world as in the new, and are, moreover, applicable both to land and to sea forces.

Among other points in "A Twentieth-Century Outlook" one is specially well put into words, even if those are but a paraphrase of a time-worn classical allusion.

Universal conscription has drawbacks, but among its advantages must be considered that complete preparations for war have a proved tendency to stave off war itself. Prophecy has, as usual, been falsified, for the storehouses of European combustibles and fortuitous ignition are no longer the brooding demons which were supposed to cast a baneful shadow over the field of European politics. War is likely in the future to be even less remunerative than in the past, when Armies were but the forerunners of the trained and armed nations of the twentieth century. In the closing article, Captain Mahan is at his best. The "Strategic Features of the Gulf of Mexico and the Caribbean Sea" are dealt with as no author but he could have done; and although the article may have been written from an American point of view and for Americans, the complex questions here clearly analysed are from their very natures those supremely concerning another nation, which exists, as such, by the continuity of its sea-power.

We may dissent from the author's opinion that "in the Mediterranean, at present, the sea Powers—Great Britain, France, and Italy—are opposed to the land Powers—Germany, Austria, and Russia; and the latter dominate action."

This is scarcely the way in which European cards have as yet been sorted, and there are far more elements of discord than of concord between some of the suggested members of the land and the sea league respectively.

The comparative failures in style and in logic that were salient in the Life of Farragut and of Nelson have, in this last chapter, no place. The thinking is clear, the arguments are forcible, and were the work a monograph it would have ensured the reputation of any author.

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*Leitfaden für den Unterricht in der Taktik auf den Kaiserlichen Kriegsschulen.*  
9th Edition. 2 Vols. Berlin: Mittler and Son, 1897.

As it embodies the existing views of the higher military authorities in Germany on the tactics of to-day, the publication of a new edition of this work is important.

It is in two volumes, the form of which can scarcely be called handy, and

their paper covers would not commend them to military students accustomed to English text-books. But the paper is fairly good and the print clear, though it is perhaps to be regretted that the old German type is adhered to, instead of the Roman type, which, generally adopted in Austria, is now much used in Germany also.

The first volume deals with the formal tactics of the three arms separately, and contains copious extracts from the latest editions of the German Infantry Drill (reprint 1889), the Musketry Instruction, September, 1893, the Cavalry Drill (1895), Field Artillery Drill (1892-93), and the Regulations for Field Service for all Arms (July, 1897). It is preceded by a short instruction. In this much stress is laid on the moral qualities necessary to ensure victory, which should content itself with nothing short of the annihilation of the enemy. The necessity for one general system of instruction in view to unity of action is insisted on. "The regulations and instructions are founded on the experiences of war, but we must also study military history in order to make history ourselves. The lessons of tactics will prepare us for this by teaching us the conditions which govern the correct handling of troops in war. Knowledge of man, power of observation, discernment, good judgment, experience are all necessary, but a knowledge of the Army and of the working of the different arms is essential to an understanding of the power and capacities of bodies of troops. Above all, the true spirit of the regulations, rather than a more knowledge of routine, should be acquired."

The Infantry formations, especially the company and battalion columns, are given in detail, with plates and reference numbers to the paragraphs of the Infantry Drill Book. The front of a company is about 100 metres, which is rarely to be exceeded when extended in action.

The usual march formation is column of sections. The fighting formation, swarms of skirmishers followed by companies in column or line. The gradual extension of skirmishers is recommended as enabling strength to be kept in hand for emergencies. The distance between skirmishers is from 1 to 2 paces (the German pace is  $31\frac{1}{2}$  inches). Simplicity in the movements of the skirmishers is essential, as once under fire great changes of front are impossible in attack; all such must be made by extension from other bodies in rear. Quick time is the rule, but the double under fire, or, for a long advance, rushes of 100 metres or so may be made. Reinforcing is by prolonging or thickening the skirmishing line. In the latter case, new sub-divisions (*züge*) and groups are at once formed by the leaders and officers. Supports follow at 200 metres distance, or closer if the ground favours it. Great stress is laid on fire discipline, which is defined much as in the English Service, and on the observation of fire effect. The hostile infantry is the chief target, but artillery and cavalry may be fired at when good result promises. The duties of battalion and company commanders and other officers in the fight, the application of the different kinds of fire, and the formations to avoid the effects of artillery fire are briefly described. Much attention is to be given to the practice of "passing the word" in action. The various infantry formations are explained, perhaps over-explained—a common fault in German teaching. Squares against cavalry are to be quite exceptional. Long-range infantry fire is not encouraged, owing to the great expenditure of ammunition involved. Infantry fire being relatively superior to artillery fire within a range of 1,000 metres, the former should always try to approach within that distance of hostile guns. The method of ammunition supply is given. Though all the German infantry are armed alike, certain rifle (*Jäger*) battalions consist of carefully picked and specially trained men.

Cavalry tactics are described in detail with plates. They do not differ materially from those of English cavalry.

The whole German cavalry is now armed with lance, carbine, and sword. The squadron of 5 officers, 150 men, is the tactical unit, formed in line in two

ranks at 3 paces distance, the frontage being 1 pace per horse. Squadron interval is 6 paces. The squadrons are normally divided into 4 *züge*, answering to the English troops. These are sub-divided into sections of 4 files each.

The march formations are columns of fours (4 men front rank followed by 4 rear rank) and columns of files.

In attacking formed bodies the trot is to be kept to as long as possible, so as not to wind the horses; but if an enemy can be caught by surprise or when manœuvring, the gallop is to be commenced as soon as the opportunity offers itself. Infantry is generally attacked in successive echelons about 200 paces distance apart; but if in disorder or suffering from want of ammunition or caught by surprise, it is to be attacked at once with promptitude and decision. Artillery in action is attacked in extended order, followed by squadrons in close order with wide squadron intervals.

The rules for dismounted action are similar to the English. Eight to twelve dismounted skirmishers form a group, two or three groups a troop (*sug*). Superior hostile infantry is not to be approached within 700 metres without the support of other arms. Dismounted action must not degenerate into a long fire-fight; it is only undertaken when necessary, and then must be carried out with decision from the first with all the force available. The cases when cavalry may advantageously act dismounted are given in detail.

*Artillery.*—The battery (six guns and nine wagons) is given as the tactical unit. The field artillery gun detachments consist of one N.C.O. and five gunners only. The intervals in line are less than in the English Service, and equal intervals are not essential. The first line of wagons (four) is never to be separated on the march or in action from its guns. Good shooting and observation of effect are considered of the first importance. The well-known principle of early preponderance of mass-fire is enforced. Infantry detachments thrown forward to a flank protect guns in action, but, when working near other troops, this special guard is unnecessary.

If a cavalry escort is required, it is placed to a flank in rear, or may throw forward dismounted men to a flank. Great care is to be observed in reconnoitring. Guns arriving in support are to avoid coming into line near an object which an enemy has ranged.

The first line of wagons is not to be further back than 210 metres. Batteries in action are not to retire, even if their ammunition is expended, but are to wait for more. The rates of fire are "slow," "ordinary" (about four shots a minute), and "rapid," each gun firing by order of its commander as soon as ready. This will give a rate for the battery of about fifteen shots per minute.

If the enemy is encountered on the march, the chief object of the artillery commander must be to gain time for the commander of the force to make his arrangements and deploy. The more the artillery can dispense with the support of large bodies of infantry, the better this object is fulfilled.

Quick decision and every effort to obtain early superiority of artillery fire are essential. In the attack of a prepared position, the support of the infantry is the chief duty of the artillery, so some guns accompany the infantry to within close range, others remaining within effective artillery range to shell troops reinforcing the hostile line. In case of retreat the artillery rallies the infantry. In defence the chief objective of the guns is the hostile infantry advancing to the attack, to repulse which every available gun must be brought into action.

It is considered that on the whole the accuracy of artillery fire is greater than that of infantry, as the smoke of the bursting charges of the shells facilitates observation, while the depth of the cone of dispersion of the new shrapnel ensures searching fire effect. Artillerymen are easier to train than cavalymen, and their losses in action are less. Owing to magazine rifles, artillery is of enhanced importance for the preparation of the infantry attack. France, Germany, and Russia, recognising this, have increased their artillery.

*Engineers.*—In each German infantry division there is a field bridging company of engineers, which carries material for a bridge of about 40 yards' span. The corps bridging train can span a space of 133 yards, so altogether, with each army corps, a river 800 yards wide can be bridged. This takes about half a day. All engineer companies and detachments carry portable field entrenching tools for the construction of field entrenchments in addition to the entrenching implements carried by the infantry. They are armed and trained like infantry, and are employed as such on emergency; but, as a rule, their technical duties are not to be interfered with.

Vol. II. deals with applied tactics of the three arms in combination, and commences with a brief description of the organisation of the German Army, which is well known.

The chapter on marches is very complete and detailed. As the organisation, arming, and training of European Armies is most similar, the influence of numbers is more felt. Hence, every effort must be made to get together the greatest number in the best condition at the right time and place. The principle "march divided to strike united" is more important than ever. As a rule, in war the greatest losses are by marches and sickness, hence the necessity for the greatest forethought and good arrangements. Owing to these, the German losses in 1870-71 were 12,000, as against 28,000. The usual march rules are given. An ordinary day's march is from twelve to nineteen miles. Every fourth day should be a halting day. If, in our Service, we had insisted on this, some of our Indian campaigns would have lasted interminably. However, one day in seven there should certainly be a day of rest to repair wear and tear. The Germans exact much more prolonged distance marches from their cavalry. "Rapid marches" are those made without halting days. Over twenty-eight miles a day can rarely be marched by large bodies for long together. Some exceptional, prolonged marches are mentioned, *e.g.*, the march of the 3rd Army to Sedan, marching nine days uninterruptedly, and fighting on the tenth. "Forced marches" are those carried on by day and night with short halts only, *e.g.*, the 9th Corps marched from Bloris to Sedan—51 miles—in thirty-five hours, including time for halts. Means of accelerating marches are mentioned. About 100 wagons are required to carry a battalion of infantry.

When marching alone, the pace for infantry is 100 yards per minute.

"	"	cavalry	137	"	"
"	"	artillery	122	"	"

To this the time halts are added.

When marching in a mixed column, about 90 yards per minute may be reckoned on if circumstances are favourable. Certain fixed intervals are left behind units as follows:—

Companies	...	...	...	...	about 9 yards.
Battalions, squadrons, or batteries	...	...	...	...	18 "
Regiments or artillery brigade divisions	...	...	...	...	33 "
Infantry divisions	...	...	...	...	60 "
Cavalry divisions	...	...	...	...	297 "

These, however carefully calculated, are not to be rigidly adhered to. The great thing is to secure the steady advance of the bulk of the infantry, the slowest moving and most important arm, so the best part of the road must be reserved for them.

*Halts* are, as a rule, made shortly after starting, then only once every two hours, and once in the middle of a long march.

A short chapter on transport by rail is added. One long train carries a battalion, one and half squadrons, or a battery of horse artillery. For a complete army corps 100 trains are required. The cases where transport by rail is especially useful are given.

Much weight is given to the exact method and accuracy of *Reports and Field Messages*. The ordinary rate for orderlies (trot and walk) is six miles an hour, the trot being nine miles an hour. In describing positions, officers are warned not to indicate a hill by its height on the map only, as there may be several of the same height. When reporting columns observed at such a time and place, it must be stated whether the head or tail of the column was seen, etc. The spaces occupied by German units in column are similar to the English, *e.g.* :—

A battalion	... ..	takes up about 440 yards.
A regiment of cavalry	... ..	" " 700 "
A battery of field artillery	... ..	" " 200 "
A bearer company	... ..	" " 240 "

In one minute it may be calculated that a mixed force covers about 88 yards.

Divisions marching in column on parallel roads should be within  $3\frac{1}{2}$  miles of one another for proper material support, and army corps within eight miles.

The formation of advanced guards is briefly treated. The rear guard consists of about one-quarter of the whole, and is pushed forward about a kilometre (5 furlongs) in advance of the main guard, and sends out a company or *sug* (according to its strength) about 2 furlongs ahead.

Cavalry reconnaissance is shortly touched on. The prompt and frequent sending in of reports is insisted on, especially when first gaining touch of the enemy.

Reconnaissances in force are only ordered by the commander-in-chief prior to a general action, etc.

Short chapters on cantonments, bivouacs, and supply follow.

*Outposts* are next fully detailed. Observation by constant patrolling, especially by cavalry "standing patrols," is much insisted on. These are of a few men only, under an officer or non-commissioned officer, pushed well forward on to a flank, which must keep in touch with the enemy, even at night, though the bulk of the cavalry may then be withdrawn behind the infantry. If short of cavalry, or the country is very close, infantry outposts only are used, with a few mounted men attached to each body for scouting, as messengers, etc. For the latter, cyclists are to be used, and also for patrolling, when roads admit.<sup>1</sup>

Much use is made of small posts of one non-commissioned officer and six men, of whom two are always on the look-out, the others close at hand.

A short practical discussion of the relative advantages of the offensive and defensive is entered upon, and historical examples are quoted.

Here it may be remarked that one of the merits of this text-book is that the paragraphs in the Drill Book to which the text refers are given, and that in the text brief reference notes of page, paragraph, etc., of the examples from military history which illustrate the theory of the text, are given. This does not interrupt the continuity of the text. The examples are few, and briefly described in a separate volume. This method appears preferable to that of the Sandhurst text-book, where the theory in the text is mixed up with a large number of examples from military history, some of which are described and some are not. The result often is a certain confusion in the minds of young officers as to the lessons to be drawn. Examples require to be very clearly described and very clearly illustrated, and a good modern book of examples, chiefly from English military history, is much required.

A few pregnant sentences on the art of command here follow, such as "Success is to be obtained with as little loss as possible, so all the force available should be ready at hand if required. The spirit of the troops must be keenly watched and elevated. Chance must be eliminated as much as possible by careful calculation and painstaking forethought in arrangements, as the more Armies of the present day are on an equality as regards armament, training, etc.,

<sup>1</sup> The introduction of a folding cycle of the "Styria," or similar pattern, with chainless gear, is now under discussion.



the more certain it is that the highest *moral* will prevail. Thorough mutual confidence between officers and men is necessary to take advantage of unlooked-for success or to make head against unexpected disaster. Therefore, the simpler the plan of the leader and the more he can impress the *spirit* of it on his subordinates the better. This is one of the great advantages of taking the offensive—the initiative which enables decided plans to be formed. A firm character and good practical arrangements may gain the victory of renowned warriors even. Without them genius, talent, even luck, are of little avail."

A short description of the normal conduct of different kinds of actions is useful as enabling officers to realise what generally happens. When the enemy is encountered on the march, the commander of an advanced guard must on no account take upon himself to carry on an independent action in the absence of the commander of the whole force by which he might force the hand of the latter, and must avoid engaging his force in disjointed, disunited action, but must act with rapidity and decision. The cases when a bold offensive may however be taken are given and examples quoted.

General principles are given for the conduct of the fight, frittering away of reserves, and their being kept well at hand for decisive action at the right moment is especially dwelt on.

If during the preliminary action the enemy is found too strong, and so defensive action is necessitated, one more *united* offensive effort, if the troops are well in hand, is still recommended, under which the defensive position may be occupied; but if the troops are, however, already dispersed this is impracticable.

When the enemy is in position careful reconnaissance and preparation of the attack are imperative. Examples of orders for such are given. Premature action of subordinate leaders is here especially deprecated.

In a successful assault unremitting pursuit by infantry and artillery fire follows, while the reserves occupy the position which is strengthened.

When the enemy has retreated beyond rifle range, the bulk of the artillery follows him up to hinder his rallying until dark sets in, the cavalry and horse artillery pursuing *à outrance* to attack in flank, or if possible even head the retreating foe.

The moral as well as physical loss entailed on the enemy by immediate relentless pursuit is much insisted on.

As a modern instance of orders for successful pursuit, the orders of General von Goeben after the battle of St. Quentin in 1870-71 are given. It is brought to mind, however, that the present rapid-firing rifle enables small bodies of good infantry to offer a more prolonged resistance than formerly, during which the main body can push forward and rally.

The usual rules for the occupation of defensive positions are given. When such positions are taken up to the *flank* of an enemy's main line of advance in view to issuing therefrom and acting against his communications, it is well to make sure that the issues are in your hands, or you may not be able to get at him. Entrenchments are considered of increased importance to the defence, only these must be subservient to the object of the commander. If a decisive battle is to be fought, the concentration of the defence in one position is recommended. Equal exposure, simultaneous artillery and rifle fire are annihilation, so several lines, one behind the other, are occupied, so arranged as to expose the attackers to this. Advanced posts should not be occupied if beyond effective rifle range, as they may be surrounded and cannot effectually be defended from the main position, and their occupation is in general condemned, as leading either to the annihilation of the troops therein, or, if they are supported, to the main fight being carried on elsewhere than intended.

The main line and local reserves should belong to the same body of troops.

The guns can be placed echeloned to a flank in rear. They protect the flanks. They must be protected by infantry thrown forward.

Not a shot is to be fired until the commander orders it, as early artillery fire against insignificant objects serves only to disclose the position without doing the enemy serious harm. But if good targets present themselves, or if the enemy can be fired on when emerging from a defile firing must not be delayed, and in any case the early employment of the attacker must be compelled. Economy in the use of the defensive force must be exercised; crowding men in unimportant positions avoided; but niggardly distribution in important ones leads to greater expenditure of men in retaking them when they have fallen; and plenty of ammunition may make up for paucity of men.

The general reserves must be held in hand for counter-attack.

If retreat is ordered, the first thing is for part of the artillery to get into a good position to a flank in rear, where it can rally the retreating main body and occupy the defiles on the line of retreat. If hard pressed, repeated sharp counter-attacks must be made by the freshest troops available, the cavalry co-operating.

Too frequent halts to make head against the enemy are a mistake, as it is more difficult after each to shake him off.

A short, clear description of the arrangements for collecting the wounded, field dressing stations, field hospitals, etc., is given.

Fighting for localities is then shortly gone into, the defence of heights, defiles, woods, villages being touched upon. Officers are advised against advanced positions in villages held in connection with heights above. The advantages of small over extensive woods as tactical supporting points is indicated, as the three arms can better co-operate in their defence. The advantage in wood fighting that well-disciplined troops trained to act in small bodies possess is pointed out. The defence of the borders of woods is still considered the most important. For this about  $1\frac{1}{2}$  men per yard of front are allowed. Each battalion finds its own local reserves. The main reserves are kept outside in small woods.

Too many guns must not be used in the defence of woods owing to the difficulty of movement. The well-known examples of the wood fights of Maslowed in 1866, Wörth in 1870, and at Poupry on the Loire, are given.

In the attack on woods, much stress is laid on the necessity for reforming before attempting to pursue an enemy out of a wood, the neglect of which rule has led to many a defeat.

In the attack of defiles the great advantage the Austrians had in Bosnia from their mountain guns, some of which always accompanied their columns, was very noticeable.

Street fighting is very briefly touched on, and reference made to the Berlin explosions in March, 1848.

Partisan warfare is gone into, and the experience of the action against the franc-tireurs of 1870-71 are utilised. Night marches and attacks are briefly sketched, ambushes described, and the obstruction and destruction of railways, roads, etc., are gone into, and the best methods of utilising partisan troops are shortly described.

The chapter on strategy involves a somewhat more extensive knowledge of politics and history than most of the young officers for whom this book is intended probably possess; but, on the whole, the work is a complete and comprehensive treatise on elementary tactics well up to the requirements of young students. If it contains nothing very new or startling, it is in most cases sound and practical.

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There were Nine Appointments, and the above two places were obtained from Three Candidates presented.

**STAFF COLLEGE, AUGUST, 1897.**

The following Officers were admitted—

Captain J. H. V. Crowe .....	Royal Artillery.
Major A. G. Hunter-Weston .....	Royal Engineers.
Captain J. S. Fowler .....	Royal Engineers.
Captain A. Lynden-Bell .....	The Buffs.
Captain J. H. W. Pollard .....	Royal Scots Fusiliers.
Captain E. H. S. Twyford .....	The Cameronians.
Captain H. C. MacTier .....	2nd Bn. Hampshire Regt.
Captain A. T. England .....	Sherwood Foresters.
Captain G. Stockwell .....	Highland Light Infantry.

And one other Officer qualified.

At the last six Examinations, **Seventy-four** Officers went up, of whom **Sixty** qualified, and **Fifty-six** were admitted into the College, the **First Place** being taken on **Four** occasions. Details of the recent Examinations are not yet known.

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**240**



# JOURNAL

OF THE

## Royal United Service Institution

PUBLISHED UNDER THE AUTHORITY OF THE COUNCIL.

Editor - Captain H. GARBETT, R.N. (Retired).

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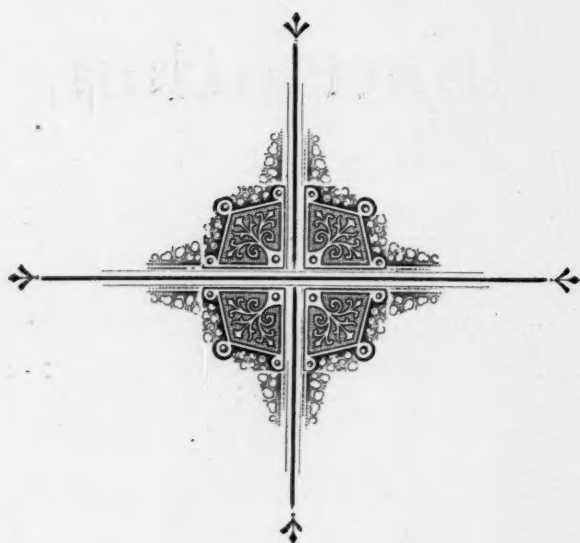
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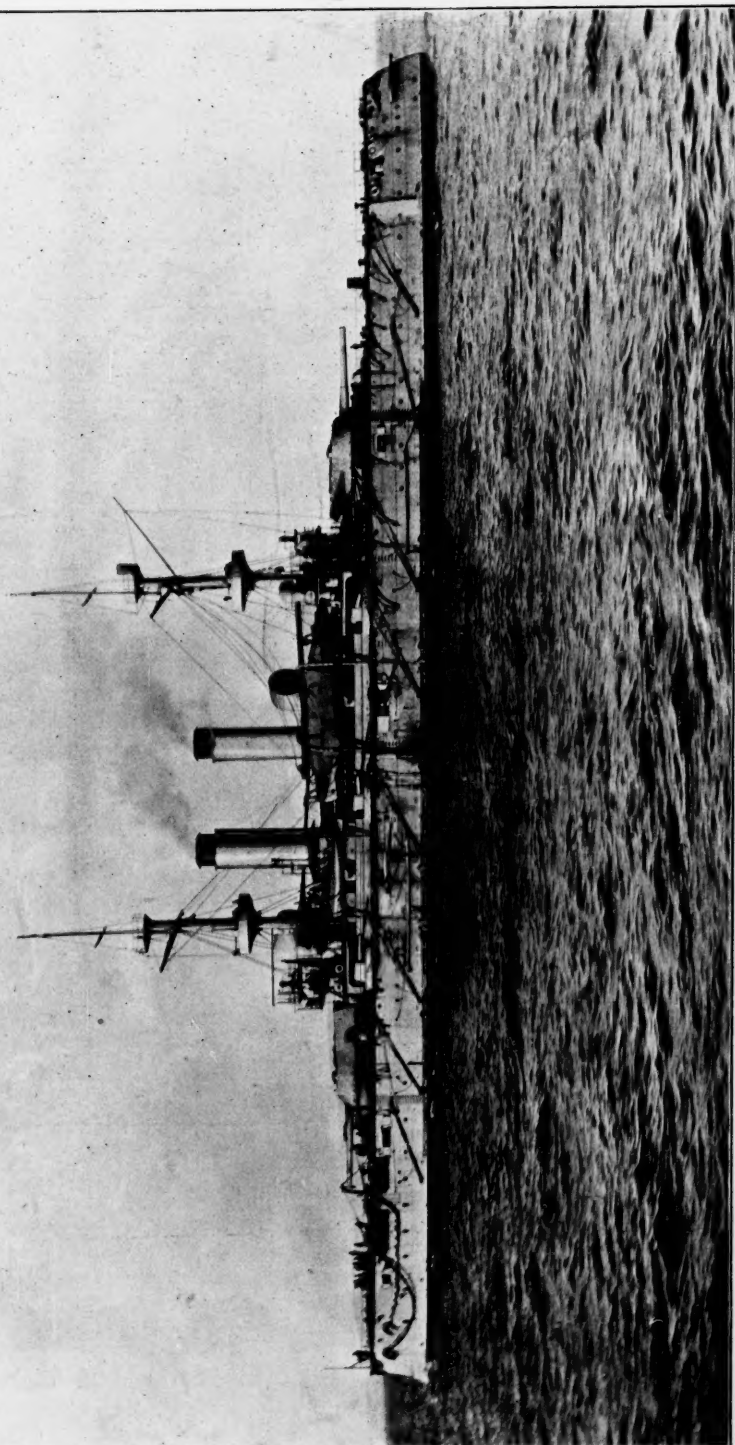
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**EXTRA LECTURE.**

**Wednesday, 2nd March, 3 p.m.**

**"The Chinese Question: How it may affect our  
Imperial Interests."**

**By**

**Mr. Archibald Colquhoun, F.R.G.S.**



# THE JOURNAL

OF THE

## ROYAL UNITED SERVICE INSTITUTION.

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VOL. XLII.

FEBRUARY, 1898.

No. 240.

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*[Authors alone are responsible for the contents of their respective Papers.]*

### THE GREAT SIEGE OF MALTA, 1565.

*By The Rev. W. K. R. BEDFORD.*

---

Thursday, June 10th, 1897.

Field-Marshal SIR J. LINTORN SIMMONS, G.C.B., G.C.M.G., R.E.,  
in the Chair.

---

THERE are few incidents in the world's history so important, and at the same time so fraught with the picturesque elements of romance, as the successful resistance by the Order of St. John of the attempt by the Mahommedan Sultan, then in the zenith of his power, to drive them from the island to which they had repaired after the fall of their former capital at Rhodes. It is well nigh presumptuous once more to essay to tell a story told already by the glowing pens of Prescott and of Porter; but this afternoon I have the aid which these writers had not—of pictorial illustration; and relying upon the opinion of the Latin poet—

“Those rouse the mind more slowly by the ear

Than what the faithful eye at once makes clear,”

I shall endeavour to make up for the inferiority of my narrative by the explanation of lantern pictures mainly taken from those which, while the incidents they represent must still have been fresh in many memories surviving, were limned upon the walls of the palace of the Grand Masters.

First, however, I must say a few words as to the events which immediately preceded, in fact led to, the war.

I need not trace the course of the Hospitallers from their first inception as a charitable fraternity in Jerusalem, through their crusading days and their exploits against the Saracens and Turks in the Holy City, at Acre, and in Cyprus; but I must briefly touch upon their residence at Rhodes, where they consolidated their power, regulated the system of langues or national corps, and became so formidable to their infidel foes



that the utmost efforts of Sultan Mahomet the Second were insufficient to subdue them. Indeed when, after the death of that grand Turk, one of his sons found an asylum with the Knights, and his successor (the other son) Bajazet thought it advisable to conciliate them by the gift of the great relic, the hand of St. John, the Hospitallers seemed to have arrived at the culminating point of their success. Their fleet constantly made prizes even of the largest Turkish vessels, though the latter mounted immense guns, and carried crews exceeding in numbers what was usual in those days. The sixteenth century opened upon a grand prospect of victory and prosperity, only dimmed by an earthquake, which damaged the fortifications of the town of Rhodes. In the meantime, however, the son of Bajazet, Selim, had in his turn been succeeded by Sultan Solymán, an ambitious warrior, who determined to avenge the defeat which his predecessor had sustained in the former siege; and in 1522, after a conflict which lasted from June to December, succeeded in expelling the Order from Rhodes. The then Grand Master, L'Isle Adam, after a vain attempt to procure means for the recapture of Rhodes, accepted from the Emperor Charles V. the sovereignty of Malta, to which the Knights repaired in October, 1530. Unattractive as was their new possession by contrast with the verdant fertility of Rhodes, they found one great advantage in the splendid harbours of the northern shore, where the Norman count Roger of Sicily had erected a castle, called St. Angelo. Within this fort and in the village behind it called the Bourg, they fixed their future capital, deeming the situation of the former one in the centre of the island too remote, and its defences too feeble for the seat of a militant community. They immediately commenced works to enlarge and strengthen the existing fortifications of the promontory, especially at the point where it touched the mainland. The Grand Masters who succeeded to L'Isle Adam were constantly employed in this work, and one of them, La Sangle, extended his redoubts to the adjacent promontory then known as St. Julian, since as Senglea.

This improving state of the convent was broken upon by a furious hurricane in 1555—23rd September—which, besides doing great damage on shore, wrecked nearly the whole fleet of galleys belonging to the Knights; a calamity which encouraged the corsair Dragut, the lieutenant and successor of Barbarossa, who had formerly threatened Notabile and ravaged Gozo, to make another attack on the island, in which he was defeated. There can be little doubt that this reconnaissance on his part was the immediate cause of the siege, for he would have no difficulty in persuading the then Sultan, Solymán the Magnificent, that it only required a sufficiently large force to crush the nest of enemies, whose galleys issued from the rocky port to harass and destroy the Moslem vessels, and had recently taken the richly-laden ship belonging to the ladies of the seraglio. This was determined upon early in 1565.

In addition to the history of this famous expedition, written from the best authorities by the Abbé Vertot, two contemporary records may be quoted: one mentioned by Prescott, the diary of a Spanish soldier named Balbi, of which I have never been able to see a copy; the other the

narrative of John Anthony Viperan,<sup>1</sup> published at Perugia in 1567. This Knight, a member of the Italian langue, was one of the garrison of the City Notabile during the period of the siege.

The Turkish fleet consisted of 130 galleys, and 50 smaller vessels, on board of which were 5,000 Janissaries, 6,000 Spahis, 6,000 Anatolian archers, and 22,000 other soldiers, some armed with muskets, and a large supply of ordnance of a great bulk, and ammunition.

To meet this enormous force, and to garrison the two peninsulas of St. Angelo and Senglea, the fort of St. Elmo, and the detached posts of Notabile and Gozo, the Grand Master John Parisot la Vallette, who had succeeded to La Sangle in 1555, had a force of rather less than 9,000 men; of these, 474 were Knights, and 67 servants-at-arms, the choicest soldiers of that day, 1,230 regular soldiers, mainly Spanish, 875 volunteers from Italy, and 5,300 of the islanders, a levy *en masse* without much training or special warlike knowledge, though hardy and active, who, in the sequel by their valour and endurance, proved worthy comrades; and 700 men released from the galleys, as a desperate resource to augment the defending strength.

The Turkish force had two commanders, the Admiral Piali and Mustapha, a veteran general of high repute. They were both enjoined to consult Dragut the Tunisian in any operations which they undertook; but the redoubted corsair had not arrived on 18th May, when they landed their troops at Marsa Scirocco. A difference of opinion thereupon arose (the first of a long series) between the commanders, Piali proposing that no active operations should be commenced until Dragut's arrival, while Mustapha argued that the possession of St. Elmo, without which they could not enter the Muscetto harbour, was essential to the safety of the fleet, the harbours of Marsa Scirocco and St. Thomas's Bay being not sufficiently sheltered in the event of bad weather. This opinion prevailed, and after a couple of ineffectual skirmishes in the neighbourhood of Mount Salvator, and a threatened attack on Notabile, which, as the garrison was on the alert, the invaders declined to persevere in, they turned their whole force against St. Elmo.

While these operations were being debated, the Turks dispersed over the whole country, pillaging, burning, and seizing inhabitants, who were left behind, for slaves. Viperan gives a graphic description of the seizure of a large number of unfortunates, women and children mostly, who had taken refuge in a cave, only accessible by a rope, near Magdalena; 100 Turkish soldiers captured them, but they were presently rescued by sixty musketeers from Notabile, who surprised the Turks at the moment of their success.

But on the 24th May, the Turkish artillery—18 guns, ten of which discharged 80-lb. shot, and one 160-lb.—opened fire upon St. Elmo from the rocky promontory of Mount Schebarras, where it was impossible to trench the soil, so that the besiegers had to form artificial breastworks.

<sup>1</sup> Viperan seems to have been a Messenian by birth, and afterwards Bishop of Juvenacium, *hodie* Malfetta, Giovinazzo, Terlizzi, on the coast of Apulia, in the Ecclesiastical province of Bari.

It took no long time to pulverise the walls of the fort with the huge cannon-balls of iron and stone, which were discharged against it; but as no small portion of the defences were excavated in the live rock, the garrison still had shelter, and the whole of the seaward fortifications were unassailed, so the defenders could devote their attention to the land side only. There was also a passage down to the grand harbour, by which they could communicate with and be reinforced from St. Angelo, for the Turks were so cautious as to confine their batteries to the western side of the eminence, where the crest of the ridge sheltered them from the fire of St. Angelo. By the beginning of June a proposal from the garrison that the fort should be abandoned had been sternly rejected by the Grand Master, who stated that he was willing himself to take the command there rather than that it should not be held to the bitter end. To this purpose he augmented the garrison by 50 Knights and 200 Spanish soldiers, under Gonzales de Medrano.

The besiegers were now much strengthened by the arrival of Dragut, who not only brought 13 ships and 1,500 men, but the only counsel of any value in directing operations. He pointed out the mistake which had been committed by their neglect to occupy Gozo and Notabile, though, as the reduction of St. Elmo had been commenced, he now recommended that it should be persevered with. He erected a battery on the point opposite to the fort on the Sliema side, known by his name until two centuries later the French engineer Tigné built a fort there. A sortie under Medrano inflicted great damage on the besiegers' works, but led to the loss of the covered way of the fort; and not long afterwards the Turks surprised and occupied the outwork on the western side. Thus by the 13th June the fort was completely shattered and the whole interior exposed to fire. The enemy's ships also were brought round to the entrance of the harbour to support the attack, and boats were stationed in Renella bay. Once more three commissioners were sent by La Vallette to report upon the possibility of further defence, two of whom reported the post untenable; but the third offering still to endeavour to defend it, and volunteers pressing forward to support the forlorn hope, fresh reinforcements were sent, and a struggle to the death was determined upon. The enemy attacked in force upon the 16th June; and while the main breach in the front of the fort was stormed by 4,000 men, the two flanks were also assailed by means of scaling ladders. After a desperate struggle of six hours' duration, the enemy were repulsed by the garrison at every point, though with the loss of 300 soldiers and 17 Knights, of whom Medrano was one. When night set in, the wounded were removed by boats, and their places taken by heroic volunteers from St. Angelo.

Dragut now insisted upon the necessity of cutting off this communication, and the next few days were spent in placing two cannon in such a position as to command the secret passage. While superintending this work exposed to the fire from St. Angelo, he was struck upon the head by a fragment of rock, and removed in a dying state to his tent at Tigné.

For three days following the defenders of St. Elmo were exposed to

the full fire of the enemy's ordnance, now numbering 36 pieces. On the 22nd June another general attack was made and repulsed; but the garrison was now reduced to sixty men, who, by an expert swimmer, communicated with La Vallette. He sent boats to bring them off, but his efforts were frustrated by the guns which swept the landing place. All human aid thus being denied them, the defenders sought the last consolations of religion in the little chapel (Plate II.) still existing beneath the ramparts, and then took their post, sword in hand, at the top of the breach—some, crippled by wounds, being supported on seats—to sell their lives as dearly as they could. The first assault of the Turks, incredible as it may sound, was successfully resisted; but renewed hordes of the enemy swarmed in upon them from every side, and scarcely a single Christian survived. Some of the native soldiers, expert swimmers, threw themselves into the water, but only one or two escaped the enemy's boats. When the bodies of those who were lying in the breach were examined, it was found that in nine of them life was not extinct; and these were pounced upon by Dragut's men as available merchandise.

Mustapha took a barbarous revenge upon the lifeless corpses of the Knights, which he tied to planks after decapitating them, and set floating in the harbour to be washed past St. Angelo. La Vallette retorted by a similar defiance, beheaded certain captives, and fired their bleeding heads at the Turks from his cannon.

At this moment Dragut expired in his tent at Tigné.

Thus fell St. Elmo: a defence which may be made a parallel with Thermopylæ and Rorke's Drift. Six thousand of the besiegers lost their lives, and 1,140 of the Christian garrison, of whom 140 were members of the Order. It was the turning point of the campaign; and sad as the St. John's Day must have dawned on the Grand Master, the failure of the expedition was practically due to the protracted resistance of St. Elmo. The assailants had not only lost the flower of their Army, but a greater loss still, a month of invaluable time, and from this time forward fought with an avenging sword impending over them.

But, for the moment, it looked as if the ruin of the defenders was near at hand. The Turkish fleet at once occupied the Marsa Muscetto harbour in full force, fifty ships having recently joined them with supplies; moreover, the crews and slaves conveyed some of the lighter vessels across the narrow neck between the Pieta creek and the upper portion of the Grand Harbour, where they launched them so as to attack St. Angelo and St. Michael from that side. The entrance to the Grand Harbour was closed by a chain, so fearful were the Turkish commanders of a surprise from Sicily; and, collecting every available soldier, Mustapha invested the two promontories closely, forming a fortified camp where the Cottonera lines now stand. Fortunately for the garrison, on June 29th, just before this investment had been completed, a band of their friends from Sicily, having landed on a misty night at a little creek opposite Filfla, made their way across the island to Biglie, where they were ferried over into St. Angelo. This added nearly 750 men, 42 of whom were Knights, to the strength of the garrison.



The Turkish commander now sent a flag of truce, with an envoy, to propose terms of surrender to La Vallette. As might be surmised (like the King of Assyria's envoy to Jerusalem), his real object was, if possible, to detach the natives from their fidelity to the Order by promises of kind treatment in case of surrender. To this message the Grand Master simply returned a stern defiance, and a threat to hang the messenger. No compromise was possible. Valuable information as to the resources and intentions of the besiegers at this time was obtained from a Greek deserter of princely descent, named Lascaris, who contrived to escape from their camp. He rendered important service to the Order.

July had now set in with excessive heat, and the Turkish commanders determined upon a grand attack, chiefly directed against a stockade which, at Lascaris's suggestion, had been erected about six yards from the shore along the Corradino face of the promontory of Senglea. Hassan of Algiers had just arrived with 27 ships and 2,500 men in the Turkish camp, and to him the assault was entrusted on July 15th. He commanded on land, while his lieutenant, Candelissa, led the attack by water, selecting, says Viperan, men who did not know how to swim, that they might fight more desperately on landing. He also made his boats stand off, as soon as they had disembarked in water which reached shoulder-high. They carried the stockade, and, an explosion having thrown the defenders of the breach into confusion, were on the point of scaling that also, had not Zanolguerra, the Spanish commander, with desperate energy, fought them step by step. To complete their success, Mustapha embarked 1,000 of his choicest Janissaries in ten large barges, and despatched them to attack the point of Isola (where the fort is now). In doing this they exposed themselves to the fire of a battery at the water's edge of St. Angelo, and the effect of the volley was to sink nine out of the ten boats, with the loss of at least half the attacking force. At the same time a column from the Borgo came across the bridge of boats to the assistance of the defenders of Senglea, and both Hassan and Candelissa were routed with great slaughter, no quarter being given, and the boats having to return some distance to rescue the fugitives. The loss of this memorable day to the Turks was nearly 3,000, and 250 of the garrison fell, including the commandant, Zanolguerra, and the son of the Viceroy of Sicily.

No other serious attempt at assault by boats was made after this, Candelissa being stationed at the mouth of the harbour to intercept any relieving force, and a squadron cruising off Syracuse for the same purpose under a corsair named Cavagiali.

On the 2nd August, Mustapha made a great effort on St. Michael's fort without any better success than Hassan, a mine which he had intended to spring upon the defenders having been exploded by them during its construction.

The error of leaving Notabile unattacked was now practically evidenced; every day 100 or 150 horsemen left the city and repaired to Casals Zabbar, Zebbug, or Tarschien, to harass the rear of the Turkish Army. On the 7th August another assault in force having been delivered



upon both promontories, the bastions of Castile and St. Michael's were simultaneously assailed, and while Piali was repulsed with great loss in the first, the latter all but fell into the hands of Mustapha, who had planted on the fort the Turkish standards, when he suddenly gave the signal for retreat. The cause of this was that the contingent from Notabile having found from Tarschien (so Viperan tells us) a secret path to a spot within a dart's cast of the Turkish camp, surprised and cut down the guards, and were slaughtering the sick and plundering the tents there. Of course the alarm spread that the relieving army had landed, and the Turks hastened back to find that they had been tricked by a few marauders. It is not surprising to learn that the Turkish commanders began to meditate a reduction of Notabile, which they first attempted through a renegade spy, who was detected and hanged. On the 18th August, Piali contrived by means of a mine to breach the Castile bastion to such an extent that, Viperan says, a horseman could easily have surmounted the wide and easy incline; but La Vallette's firmness prevented any decisive advantage from this success, though for four days every effort was exerted to make good a footing in the defences. The Grand Master himself took up his quarters close to the breach, and encouraged his followers.

Great use was made here, as at St. Elmo, of fireballs, fireworks, pots of earthenware full of wildfire (saltpetre, camphor, varnish, and pitch), hollow cylinders of wood filled with the same combination, used with a long steel fork like the specimen in the Armoury, and a hoop surrounded with flax steeped in inflammable matter. Often when these missiles were thrown on the Christian squadrons, the armour they wore rendered it a comparatively easy task to toss them back upon the foe who, dressed in light and loose attire, suffered far more than the panoplied cheyaliers.

Exhaustion, however, was now the prevailing condition on both sides. While the few but heroic defenders were losing strength under the daily exertions which they had to maintain against climate as well as combatants, the Turks began to suffer from disease, and lost quite 800 men by dysentery—Viperan complacently says from poison placed in the wells.

The position of the Viceroy of Sicily, Garcia del Toledo, was a critical one. Under express injunctions not to despatch troops to the assistance of the Order until the Knights were reduced to the last extremity, he had made promises and sought excuses, in neither of which he could have felt much sincerity. He now sent over a confidential agent, Salazar, to make a personal inspection of the state of things in the island. Salazar succeeded in landing, and made his way to Città Vecchia, from whence, with the escort of 100 horse, he reached in the early hours of 22nd August the village of Tarschien. From thence, with two companions, he walked towards Margarita hill, on which side the Turkish camp was asleep and unpatrolled; passing on to the extremity of the works, he observed that there were only twelve paces between the advanced posts of the besiegers and the walls of the Borgo. He then retired unobserved. On rejoining his escort at Tarschien, he found that two

Turkish stragglers had been made prisoners, and from them his escort had learned that Piali, with 1,300 men, had started to surprise Notabile. Naturally, the escort lost no time in commencing their journey back, hoping to arrive before the Turks—the latter again discovered, as the day broke, that they were in the presence of an armed enemy, and in their turn fearing a surprise, after a little skirmishing withdrew their forces. An incident recorded by Viperan is very characteristic. One of his cavalymen took a Turk prisoner, and having tied his hands, mounted him behind him on his horse. The Turk got his arms free, and clasped his captor so tight that he found he had caught a Tartar, and roared for help. Another cavalier came to the rescue and ran the Turk through with his lance. The original captor, however, was not satisfied without the head of his prisoner, and while dismounted for the purpose of completing the decapitation, was set upon and slain by several of the enemy.

Salazar returned to Sicily on the 23rd August, and on the 25th the relieving force set sail from Syracuse, where 145 ships had been collected by Garcia.

They did not, however, start with the unanimous approval of Garcia's counsel of war, one of whom absolutely stated that he thought the best termination of the campaign would be that the Turks should exterminate the Knights, and be themselves exterminated by the Spanish force. Such may have been Philip's opinion, but when the Protestant Queen of England had ordered public prayers in the churches for the defenders of Christendom, the Catholic King could hardly hold back.

Unfortunately, stormy weather ensued, and the fleet had to put back more than once. That this storm was no fiction, we learn from other sources, as an attack projected by the Turks was rendered ineffective, they declared, by the weather, which rendered their artillery unserviceable. It was in the interval of one of these tempestuous days that the garrison contrived to destroy by fire a large movable tower which the Turks had raised.

At last the columns of the besiegers had to be driven up to the charge by blows from the flat of their officers' sabres, while the defenders simply cut down those who headed the charge, and the rest gave way. When the Grand Master could send a messenger to Notabile, and he could return with his message safely, the last stage had been almost reached.

The rapidity with which the evacuation took place shows the state of discomfiture to which the besiegers had been reduced. On the morning of the 7th September, 8,500 soldiers landed from Sicily at Melleha Bay, and the fleet returned for 4,000 more, and supplies. During that night the Turks removed their war material to their ships, and on the next morning all their posts were abandoned. The garrison at once re-occupied St. Elmo, and harassed the retreating Turks. When, however, Mustapha learned the extent of the succour afforded, he landed at St. Paul's Bay 9,000 men, intending to march up to the old capital. On their road thither they began an irregular skirmish with the vanguard of Philip's forces, who had been posted by the commander-in-chief, Ascanio

Corneo, near Musta. Alvarez Sandeo, who was in charge of the detachment, could not restrain their impetuosity, and as the Turks gave way a general flight and pursuit took place. This was checked at the point of embarkation by the rear guard under Hassan, but the Moslems were fain to re-embark after considerable loss, and made the best of their way to Constantinople, their numbers having been reduced to 15,000 at most. The gallant garrison had likewise suffered severely, barely 600 being left without some wound to tell of their victory.

A French writer (1887) puts the loss of life at 260 Knights, and nearly 8,000 soldiers in the defending force; and of the Turks, 30,000 men.

No wonder that all Christendom joined in contributing to the erection on Mount Schebarras of a town to bear the name of the hero who had commanded in such a splendid campaign of endurance and bravery.

Pictures of the main incidents in the war were painted in 1601 by Matteo d' Aleccio to adorn the walls of the palace, which, thirty years later, were engraved at Bologna, and the four accompanying illustrations are taken from those engravings:—

Plate I.—The landing at Marsa Scirocco of the Turks on 20th May, 1565, and their advance upon the town and castle of St. Angelo.

Plate II.—The capture of St. Elmo, 23rd June, 1565.

Plate III.—The assault upon St. Michael's Fort, Isola, 28th June, 1565; and shows the bridge of boats between St. Angelo and Isola, and the chain across the harbour.

Plate IV.—The attack by the Turks by boat upon Isola Point, 15th July, 1565.

The CHAIRMAN (Sir Lintorn Simmons):—I am sure you have been all very pleased with the lecture and the pictures which Mr. Bedford has been kind enough to show you. I think there is one great lesson to be learned from this lecture which may be of value at the present day. The Grand Master La Vallette was charged with the defence of a fortress, and there was a probability of its being relieved at no distant date by sea from Sicily. His object, therefore, was to gain time for his friends to come to his assistance and to raise the siege. When first the Turks landed there was a discussion between La Vallette and some of his officers as to what should be done with the island of Gozo, and with Notabile, the capital of the island. The Knights generally thought that it was better to withdraw the troops they had in Gozo or in Notabile so as to augment the garrison, which was none too strong, to the utmost. La Vallette, on the contrary, considered that it was better to hold Notabile so as to gain time in case the Turks decided to attack it, and no doubt if the Turks had had the advice of Dragut they would have attacked Notabile before commencing the siege of the fortresses round the harbour of Valetta. They were, however, otherwise advised. The admiral pressed Mustapha to seize upon St. Elmo, so that he might get his ships into the safe harbour, the Marsa Muscetto, and the consequence was they attacked St. Elmo and left Notabile alone. That had a very serious effect on the siege, because when one of the attacks was taking place on Senglea, which was all but successful—in fact the Turks were on the ramparts, and might have considered it was a successful attack—the news came that the enemy were in the Turkish camp, slaughtering

the wounded and sick who had been left there whilst the others were fighting on the breach which they had practically captured. Mustapha himself was with the advanced troops on the breach, and when the news was brought to him that his camp was attacked he at once sounded the retreat, and the place was saved from falling. There is no doubt about that. The defence of St. Elmo is memorable in consequence of the wonderful pluck and valour of the garrison and their self-sacrifice, which induced them to stand till the last man was killed—a remarkable instance of tenacity. La Vallette was entreated to withdraw the garrison, but he desired them to hold on, and sent his best men to hold it to the last, his object being to gain time. This is an example for the defender of any fortress to hold on and to be tenacious, even though he may lose a considerable number of men. I think 15,000 men were lost altogether in the defence of St. Elmo, but that loss—equivalent to a heavy battle—practically saved the island from falling into the hands of the Turks. A whole month was gained for the relieving force to come from Sicily. I think these are very important points, and bear upon our position now in Malta. Although the defences are very much augmented, and we no longer depend upon the old works as they stood in former days, still it is a place that in the event of war with maritime Powers is very open to attack. The fortress protects a large arsenal on which a very large amount of money has been expended in making docks, which will receive the largest ships in Her Majesty's Navy, and in setting up machinery of an extensive and powerful nature. It contains an immense supply of stores, and in fact it is of the greatest consequence for us to hold it. One often hears that the Navy can defend their own bases; but the great principle of defence nowadays, I believe, of a maritime Power is that the Navy should have well-protected bases for their operations containing all necessary stores and appliances for repairs, and thus be perfectly free to act in the open sea to follow the enemy wherever he may be. Under these circumstances an island like Malta, or a fortress which is intended to defend an important base for the Navy, must depend upon its garrison for a certain time, and for that reason the garrison ought to be well provisioned, and be able to hold out until there is a reasonable prospect of its being reprovisioned. That is the object we have in our defence of Malta; and it is to be hoped that if ever a war should take place—which I think we should all regret immensely—with maritime Powers, Great Britain will find a man like La Vallette in command, who will stick to his colours and carry out a defence which may rival that of La Vallette. In order to do this it is necessary that the place should be well provisioned. That is a difficulty, because there is a large population in the island; but I think that it ought to be done, and ought to be carefully looked to. When I was Governor of Malta there were large supplies of wheat in the receptacles excavated in the rock, in which it can be kept perfectly sweet for several years. Formerly these receptacles were kept full, but I do not know whether that is now the case. There used to be kept a four months' supply in them. This precaution is of the greatest importance, because a garrison cannot hold out, nor can the inhabitants live, without food. There is another point which the lecturer has brought out in his lecture, and which is that the garrison of the Knights numbered about 9,000, of whom some 5,000 were Maltese. The Maltese fought well, as I believe most men will, if they are properly led and have confidence in their leaders. That was the case with the Maltese at that time. There was certainly an additional inducement to fight, because if they were caught by the Turks they became either slaves or were decapitated; but still the confidence they had in their leaders was the chief inducement to them to fight. I am happy to say that the British force in Malta at the present time amounts to several thousand men, and that H.M. Government are this year raising a new battalion of Maltese Militia, to be 1,000 strong. I heard from Malta a few days ago that in six weeks 316 men had been enlisted in this battalion. I think from the experience gained from this siege that we are on the right tack, and that the



Maltese are loyal, and will support us if we continue to treat them properly, as we do now, and as I think we shall do in the future, and provide them with proper leaders. I have not the slightest doubt that these Maltese will do good service for us, as their ancestors did for the Knights. I think it is most satisfactory that, taking a leaf out of the Knights' book, we employ Maltese to form part of the garrison. We have always had some of them in the military service ever since our occupation of the island. Since Malta placed herself under the protection of Great Britain there has never been a time that a certain number of Maltese have not been in the military service—some in one capacity, some in another; they were employed during the great war at the beginning of this century out of the island in Sicily, in Capri, and in Spain, and did very good work, and latterly in Egypt, and there is no reason why they should not render good service in the future.

General Sir H. A. SMYTH, K.C.M.G. :—I will not presume to enter upon the actual siege questions, of which you, Sir, have given such a satisfactory summation, but I have one point of general bearing on the whole question put before us. I think we are greatly obliged to the lecturer for the industry and skill with which he has brought together all the known threads, both graphic and literary, bearing on the siege. But I would beg to express some want of contentment with the kind of threads which are immediately available. The whole of our ideas of that siege come from the records collected and written upon one side of the question. There are two sides to every question, I believe, and I think also that it is well known to historical investigators that each side writes its own history, and is very liable to augment in its own interest and in its own feeling, especially where there is no communication after the events between the two opposite sides. All the accounts we know seem to have come from the side of the Knights—I might say from Christendom—in glorification of their grand outpost and its defenders, against Mahomedanism. And it is likely that if any change in the original documents be made it will always be in the interest of that idea. The poetic feelings will grow round the story of that siege, and in a small island all the more will that history ignore the ideas which might be met with in other parts of the world. I believe that military men would find it clear their notions of the occurrences of that siege if we could get some record, however small, from the Mahomedan side. I am unfortunately unable to contribute any information as to where such is to be found. I think it should be looked for, and I venture to hope that at some future time Mr. Bedford will be able to add a little to what he has given us of the Christendom side by some information which the increasing civilisation of the Turks may put at his disposal, or at the disposal of some other investigator, giving us their views of the events which took place, and their explanation of their failures, with some account of their gallantry, for there is no doubt that they must have had much gallantry and perseverance, and other military qualities, inasmuch as they stuck to their work through such trying circumstances, and until they had lost such an enormous proportion of their men.

Sir VICTOR HOULTON, G.C.M.G. (late Chief Secretary to the Government at Malta) :—The Field-Marshal has most truly said that the Maltese, whom we have lately added to our military force, will be of great service to us in time of war. In an intercepted letter of General Vaubois during the Siege of Malta, in 1798, and who afterwards, with Admiral Villeneuve on the French side, and General Pigott, and Captain Martin, R.N., on our side, signed the capitulation of Malta, 5th September, 1800, he says :—"The docile character of the Maltese has changed : we found them lions." I hope in case of war we shall find that they will prove like lions on our side, and on the subject of Maltese aid and assistance in war-time I wish to state that we are endeavouring now to induce the Admiralty to form a naval reserve as well as a military reserve. Powerful as our ships are, we all know that we are short of seamen in our service. It would be a great thing if we could form a useful naval reserve in Malta, for these men

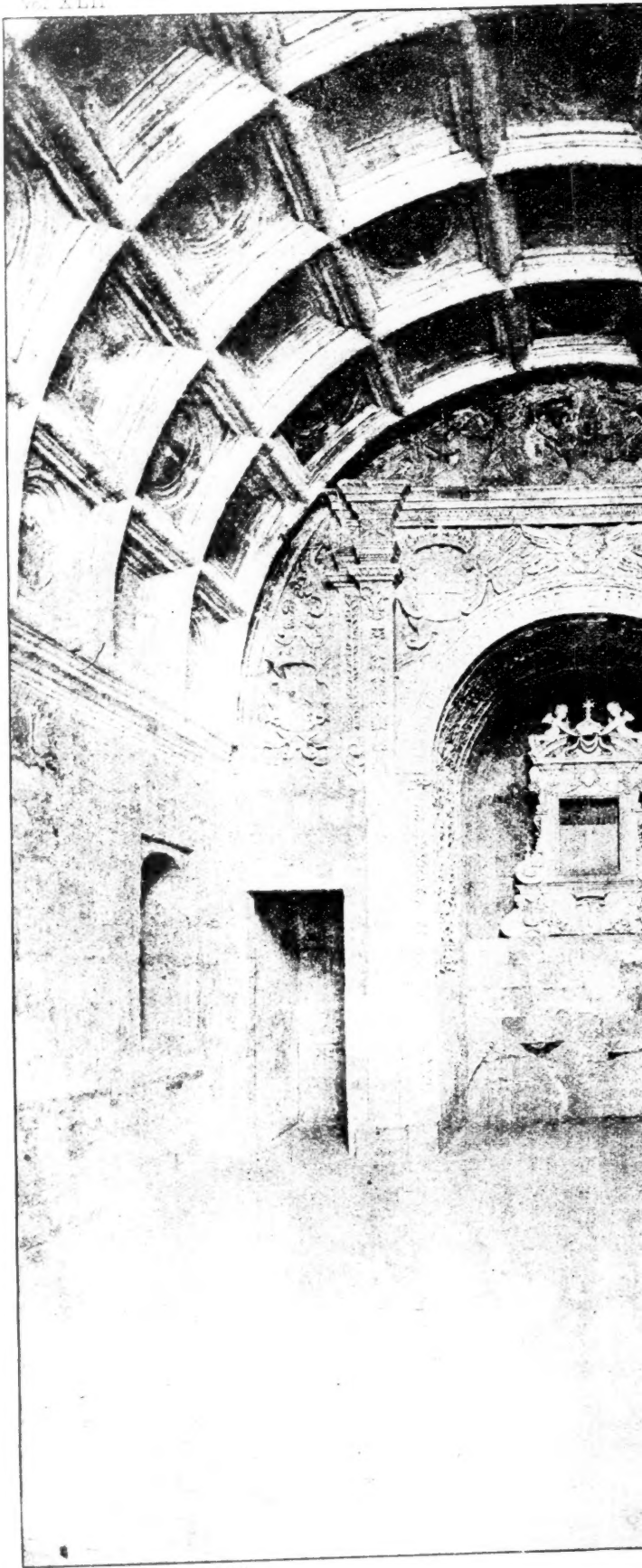


are historical sailors and brave. I know that the naval Commander-in-Chief, Sir John Hopkins, has, as far as he can, recommended this to the notice of the Admiralty in the most favourable terms, and I hope that besides these forms of Militia, which, as the Field-Marshal told us, has already begun to be augmented, we shall be able at Malta to form a useful naval reserve of men who are essentially sailors, who know every point and every local feature in the Mediterranean, and who have shown by their characteristics in history that they can be useful, serviceable, and courageous men when they are required. There should be no difficulty (the Admiralty favouring the proposal) in carrying out this useful scheme; there are *always* two or three ships of war in harbour on which the reserve could be trained.

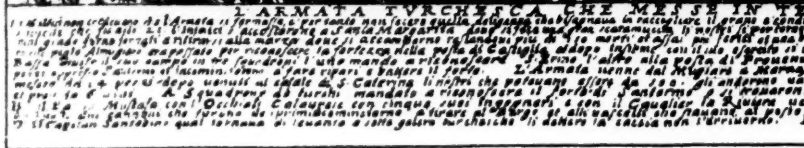
Vice-Admiral Sir NATHANIEL BOWDEN-SMITH, K.C.B. :—Malta is so much connected with our past history, both military and naval, that we must all have listened with much interest to the account of the great siege. As regards what has fallen from Sir Victor Houlton, I may say that when I was flag-captain in the Mediterranean with Sir James Drummond I had a galley's crew composed entirely of Maltese, and they proved excellent boatmen, and beat every other galley at the annual regatta. I was glad to hear you say, Mr. Chairman, that you consider Malta is of value to the country, because I understand there is a school of officers who want to make out that it is of no use to us. There are some who affirm that we can no longer hold the Mediterranean route if engaged in war with more than one naval Power. Possessing Malta and Gibraltar as bases, I do not see why we cannot hold the Mediterranean as we have done before, provided, of course, that we keep our fleet up to the present standard. If we allow it to go down to what it was seven or eight years ago we certainly could not do so, and we should probably lose Malta into the bargain. It may be of interest at this meeting to hear what the great Nelson said about Malta in the early part of this century, because I think he has sometimes been misrepresented. I have heard it said by some officers that Nelson thought Malta was of no use to us, and I wish, with your permission, just to read an extract from two letters of his as given by Mahan in his "Life of Nelson." I must first of all remind you that Malta was taken by Napoleon in 1798, and a French garrison left there; but it was surrendered again to General Pigott on the 5th September, 1800. Nelson evidently wished Malta to be restored to the Knights. He writes, in 1802, from Merton, where he was resting after the Battle of Copenhagen :—"The essential aim in the provision was that neither of the two countries should have the island"—that is, England and France. "If the Order cannot be restored, then it ought to go to Naples again under the guarantee of the Powers. It was useless to England for operations against France, and in the hands of the latter was a direct menace to Sicily." Later on he says it was no use as regards our fleet blockading Toulon, because it was a three weeks' passage from Malta to Toulon. That was in the days of sailing-ships. "This arrangement would agree with the spirit of the treaty; but if it also was impracticable Great Britain had no choice but to keep Malta herself. It would cost £300,000 annually, but anything was better than to chance its falling again into the hands of France." As I say, he wrote that with reference to the three weeks' passage between Malta and Toulon. But now mark what he writes later. "I now declare that I consider Malta a most important outwork to India, for it will ever give us great influence in the Levant, and, indeed, all the southern parts of Italy. In this view I hope we shall never give it up."

Major (Quarter-Master) R. H. MURDOCH, R.A. :—Much emphasis has been laid, by the lecturer and others, on the persistent fighting, at St. Elmo, for the possession of the harbour by the Turks. The explanation is that a close harbour was absolutely essential to Mustapha for his big ships, which constituted his base. The fleet of the Knights of St. John was insignificant, for in the subsequent 24 years' war against the Turks by the Knights—in conjunction with the Venetian











[illegible]



# LA PRESA DI SANT HERMO A DI X.

In quella Fortezza di Turchi vi trouono 27 pezzi di bronzo che subito cō uno incominciorno a tirare a S. Angelo et intrata che ufu dentro il B. grande e cō gran f. a comando che auuto si inuolse la uita e subito auuto il gran Turco cō Sirocco Cernaro. Questa fortezza fu presa la uigilia di 4. mila Turchi de più principali fra li quali feruo Dragut et altri Arals, Guinizeri et Spachi la miglior gente che hauesse l'esercito del Tur. Furro fatti schiami da 40 feriti tra li quali furro 9. Cavaglieri Fra Pietro Guadagni E. Franc. Lanfranco R. Decio Canucci Ipcani Doni. Furro messi uocellamēto nelle galere de quelli Turchi. C. Ponta delle forche. F. Tutta l'Armata turchea che salido S. Hermo. A. S. Angelo sopra il quale si uede il canone che amoue Dragut. D. Il forte di S. Michele. G. S. Hermo doue li Turchi in'corro. B. Monte del S. aduifero. E. Il reuelino. H. Dragut ferito da S. Angelo. I. Alcuni che si saluano uolando. T. due pezzi che tirauano alle barche che uenivano al soccorro. V. Il galeone che si pigliò a Turchi il quale tornouo per non hauer potuto lassar soccorro in S. Hermo. X. Corp. de Cavaglieri partiti in mare segali uenisse l'arma sopra.















A AL ISOLA DI S. MICHELE A DI XV DI LUGLIO  
 Piccole e pigliorno una fregata con alquanti Turchi acquistando nel bandiere  
 di destra murino effania soldati alquanti Cavalieri tra i quali fu Don Francesco Canaguera Simon da Keta il Gerdefe  
 lo primo d'una mano il Burne' Rodrige di Car il Padre Cap.  
 Q. Il Coradino doua stava la batteria  
 di 13 cannoni che bastavano la cortina dell'isola  
 R. Barconi che li Turchi condussero per l'assalto  
 delle sperone da Mergatufque  
 S. Batteria sopra il monte di 12 cannoni  
 V. Piali Basso General di Mare  
 X. Agi Meizut Capitano et altri si strugono di dolore  
 Y. Oschiali Greco che fu il primo a fuggire  
 Z. Naua de Genova  
 Et il Cavalier d'Arco



and Papal Navies—of 143 sail the Knights could only furnish 12. War-ships at the time were galleons or "tall" ships, galleases, and galleys. The galleons had three masts (with fourth on bowsprit) and three gun decks, could not sail against a head wind, often had to be towed by the galleys into fighting position, never boarded, fought only artillery duels, and were armed with 100 to 200 guns termed "serpentes." The galleas was the intermediate or fighting ship, had two masts with sails and oars, high bulwarks loopholed for musketry, guns on each side, 100 sailors, 290 soldiers, 300 slaves for oars. The galley was 160 feet long, had 22 feet beam, with poop and forecastle, 54 oars (5 slaves to each), two masts, and formidable iron stem for ramming. For 500 years these had not changed; for the Turkish galleon which *Cœur-de-lion* captured, off Cyprus, in 1191, is described as "big as Noah's Ark," and carried "200 serpents for destruction of the Christians," and was "rammed" by Richard's galleys. With the English expeditions to Scotland in the fifteenth century the flag-ship "Regent" was armed with 225 serpentine guns. What Mustapha dreaded was the galleys, or intervention by the Sicilian fleet, before he could secure a close harbour for his big ships, especially as the Turkish fleet adhered to defensive tactics. One illustration thrown on the screen faithfully depicts the favourite mode of attack by ramming, and the ram is distinctly discernible. Admiral Colomb has recently stated that a problem in our Navy of to-day is whether the ram should be delivered at full speed or otherwise; but in those early days ramming was always done at full speed. The Admiral also contends that the vital necessity in home maritime defence is to secure for our big battle-ships, at night, close harbours for protection from the modern galleys or torpedo-boats, which he terms "destroyers"; and that between these destroyers and our battle-ships we must construct the intermediate class of fighting vessels (corresponding to the functions of the ancient galleas). Thus, *mutatis mutandis*, these naval problems of to-day were solved in the sea fights of the sixteenth century. It will now, I trust, be readily understood why the general of Solymán the Magnificent so hastily retreated from Malta in 1565, as Mustapha feared not the 8,000 land troops sent to the relief of the besieged, but the arrival of the Sicilian fleet threatened to destroy his naval supremacy; and thus the cutting off of his base compelled him to re-embark his siege artillery and army, and left to the Knights of St. John the glory of a successful defence. It may be of interest to know that in the Museum of Artillery at Woolwich is one of the monster tubular guns of Solymán the Magnificent; it is a screw gun of beautiful bronze.

## THE FEDERAL DEFENCE OF AUSTRALIA.

*By Colonel J. M. GORDON*

*(Commandant of the Military Forces, South Australia).*

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*a.* INTRODUCTION.

*b.* WHAT HAS BEEN DONE.

*c.* WHAT REMAINS TO BE DONE.

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Thursday, January 13th, 1898.

Lieut.-General Sir J. BEVAN EDWARDS, K.C.M.G., C.B., M.P.,  
in the Chair.

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### INTRODUCTION.

"Union is Strength."

WHEN the Australian Colonies accomplish federation for defence purposes, a link will be forged which at no distant date may prove one of the strongest in the chain of Imperial defence. Day by day the exigencies of the times more and more force upon us the necessity for closer union, and for perfecting means for the protection of the possessions we hold and their expansion, and for the maintenance of our industrial and commercial interests and their development. The success of British enterprise in colonisation has made other nations envious; and at the present time the competition for the acquisition of new territories is keener than at any former period of the world's history. It is, therefore, an indisputable fact that to retain our hold on our own we must not only be prepared to fight, but we must make certain to win. The federation of the Empire for defence purposes already exists in the hearts of all its subjects. Who forgets the time when Great Britain found herself face to face with dire difficulties in its diplomatic relations with Germany and the United States? As the anxious hours passed by during which the electric wires carried messages of dignified protest to the United States Government, orders not to be mistaken to the Transvaal, and expressions of rightful indignation at the action of the German Empire, Great Britain learnt a splendid lesson—for what happened? First and foremost, party feeling was cast aside in the mother country, and unanimous support was given to the Government, which was



protecting and vindicating the honour and interests of the Empire; and further, as the dangers which threatened it were becoming known throughout the Colonies, from India, from Canada, from South Africa, and from Australasia came unhesitating assurances of loyalty and of full sympathy with the determination of the mother country to resent foreign interference in matters of British and Colonial concern. Well might Great Britain's Prime Minister exclaim, "Our isolation is indeed becoming a splendid isolation." Well, indeed, did he send forth the answer, that "Nothing could give Her Majesty's Government greater confidence in maintaining the rights of the Empire than the knowledge that their course of action had the approval and good-will of the Queen's subjects in the Colonies."

It will be remembered that the apparent assailants of our interests paused, for they doubtless realised that as long as Britons are true to themselves, and as long as they can depend upon the support of their kinsmen and subjects in Canada, India, Australasia, and other dependencies, Great Britain is willing to stand alone, to fight for her own and her Colonies' rights and liberties, and, if necessary, for the rights and liberties of the world at large.

If further proof that federation for defence is ripe in the hearts of the people is wanted, the ready response of the Colonies to the invitation extended to them to send detachments of their forces to take part in the Jubilee celebrations, and the welcome they received, should be sufficient.

Thus much for the sentimental side of the question. Now for the practical. Sound object-lessons are always to be learnt when an individual, a society, or a nation passes through any critical portion of its existence. A correct appreciation of what these lessons teach us, aided by our experience of former methods, should enable us to establish facts, and on these facts a practical line of conduct can be based. It would appear that one all-important lesson is to be learnt from the crisis that then aroused such enthusiasm throughout the Empire, and that lesson is:—"That no nation can rely for the defence of its shores merely on telegrams, however much they may express feelings of the truest loyalty and sympathy." Something much more practical is required. To be self-dependent one must be also self-sacrificing. To prove one's loyalty one must be ready to fight for one's country; and to fight to advantage one must possess the best of weapons, trained hands, and a stout heart. No one will contradict that Australia desires to be part and parcel of the greatest Empire in the world. The nature of the responsibilities attached to this has for years past been gradually more and more impressed on the minds of the colonists: whether of a social, commercial, or military character these responsibilities have been recognised and cheerfully undertaken. Some of them are of purely local interest, but the greater number are of a national character. Chief among the latter may be classed the defence of Australia.

Australia, an immense continent, is sub-divided into separate provinces, as yet in the infancy of their development, rejoicing in self-government, with constitutions founded on that of the mother country, guided by, and still happily controlled by, the ruling power of the Empire. Australia is

peopled by communities now old enough to possess a race of men locally born, capable of taking, nay, who are taking, prominent parts not only in the field of politics but in every other walk in life calling forth man's best energies. The growth of this young Australian party is fostering a patriotic spirit. The nationality of the enterprising pioneers—the fathers of the new race—is being gently shelved. A young Australian likes and wishes to be called "An Australian."

It is needless for the purposes of this paper to trace the causes which have led to Australia's extraordinary development; suffice it that to-day Australia exercises an undoubted influence in the industrial, commercial, and, it may be added, in the political interests of the Empire. It cannot, therefore, longer ignore the necessity of united action for defence purposes.

It is well, then, to consider upon what basis an adequate scheme for the defence of Australia, including Australia's responsibilities as a member of the Empire, should be founded. Well, first, what has Australia to defend? Secondly, what must be done?

The first question needs no answer here, but the second leads us to the very subject of this paper; and perhaps the best way to reply to it is to ask another question, What are its liabilities to attack? Now, within Australia's vast territories there dwell none but Australians. There is no possibility of Australians waging war against one another. On the contrary, "Advance united Australia" is the happy motto that guides the actions of all classes. There is no fear of Australian soil being reddened with Australian blood, unless it is shed in its defence against a foreign foe. Practically, therefore, as regards the defence of Australia, military preparations are necessarily narrowed down to defensive rather than offensive measures. There is a great disadvantage in this, inasmuch as a nation is not so readily impressed with the necessity for the maintenance of trained forces so long as the probability of attack from outside seems remote.

It further follows that to attempt to attack Australia the enemy must come by sea.

So long as the Imperial fleet rules the seas no enemy can hope to attack Australia in force with any degree of success. Before this can be done the enemy must sweep from his path the British squadrons and wrest from our Navy the command of the seas. Here again is another disadvantage calculated to lull the fears of a nation and make it indifferent to its responsibilities. It may rest satisfied on the supremacy of its own fleet for the time being, and also overlook the fact that any enemy being fully aware of the difficulties in its way might either elude the protecting fleet, or, diverting its attention from the real objective, strike a smaller, but perhaps equally severe, blow on some unprotected point.

Again, no fleet can exist without bases of operation to which to look for those necessities without which a fleet would be utterly useless. Men must be fed and clothed, ships must be supplied with coal, guns provided with ammunition, and, further, every facility must be afforded to effect necessary repairs to machinery or other damages incurred either in fighting

or through stress of weather. These bases must be safe harbours, should be so distributed as to best afford these facilities, and to fully answer these requirements they must be defended *from shore*—so defended that it should be impossible for an enemy's fleet to be able to force an entrance.

Now, a look at the map of Australia shows that the capitals of the several Colonies are more or less well fitted for these purposes, and have been or are being fortified accordingly.

Sydney, the capital of the mother Australian Colony, has one of the best harbours in the world, and is eminently suited as the headquarters of the Anglo-Australian squadron.

It, therefore, seems imperative to maintain these bases in an efficient condition. But, beyond this, there may be, nay, there are, safe anchorages for ships apart from the capitals of the Colonies, whence important cities may be bombarded, commerce destroyed, and Australian shores invaded. These localities must also be protected by fortresses and land forces. This duty has been recognised in many instances. Thus far provincial, or, perhaps, to express it more accurately, local, interests are dealt with. But is there not beyond this a further and equally important responsibility on each and every province to assist one another if necessary? Must not the burden placed on each Colony be relieved if, by mutual agreement, help in the shape of *personnel* and material were forthcoming when required? Settle the conditions of such a union as you may, the advantages to be derived from it are most obvious.

The principles guiding the preparation of a scheme for the defence of Australia may be summarised thus :—1. The Imperial squadron must be taken to hold the command of the sea, and to fully protect the trade routes, thereby guaranteeing safety to our shipping—this forms Australia's first line of defence. 2. Wherever suitable harbours exist, and local interests demand, safe bases of operation should exist fully protected by shore defences. Without them the first line of defence would prove totally unreliable. 3. Outside these bases, otherwise vulnerable localities should be fortified; and, finally, land forces should be available, beyond those required as above, for concentration and joint action in any part of Australia.

Practical recognition has already been given to the first principle. For some years now an agreement between the several Australian Colonies and the Imperial Government has existed, and under its provisions Australia may rest satisfied that at no time will the Imperial squadron charged with the duty of protecting Australia from an attack in force, and of guaranteeing the safety of the ocean trade-routes be permitted to become inadequate to the task imposed upon it. No doubt the fact that to thoroughly protect our commercial interests at sea, that is, to maintain our naval supremacy, is of more Imperial importance than to prevent an enemy temporarily occupying an outlying portion of our territory, led to this satisfactory agreement, in conjunction with the circumstance that the direction of the squadron's movements being handed over entirely to the Imperial authorities, there arose no necessity

for the creation of a united Australian executive authority to control or guide its actions.

The soundness of the second principle is evinced by a study of the manner in which the several capitals, which are naturally situated near good harbours, have already been fortified. It may be said, with much truth, that there has been considerable waste of money in years past over these fortifications. It may be urged that suitable ordnance has not always been selected, and that better sites might have been chosen. If so, the blame rests solely on the want of system, owing to the absence of united councils and joint action. Still the fact remains that at the present time the shore defences of Sydney and Melbourne are more than equal to effect the purposes for which they are required, while those of the other Colonies of the Australian continent require but small alterations in the nature of their ordnance to make them equally reliable. The errors of the past will continue in some measure unless it is finally decided to act in concert for the future. As long as individual Colonies are guided in the selection of their ordnance by local advice, or are led by a desire, for which they perhaps cannot be blamed, of being up-to-date, heavy guns will be obtained differing perhaps only slightly in construction, but necessitating special ammunition, not interchangeable. There is a further danger almost unavoidable under existing conditions, that is, the difficulty experienced in obtaining suitable armament when such is urgently required. Apparently home requirements absorb not only the stock-in-hand, but also the capabilities of the authorised contractors whenever an emergency occurs. Urged by the pressure of public opinion in times of scare, orders have to be placed wherever material is obtainable, and once again Colonies find themselves saddled with ordnance the ammunition for which can only be obtained where the guns have been constructed, or has to be specially manufactured at great cost. There are many other facts that prove that while the soundness of the second principle has been fully recognised, yet its application in detail has been misdirected. The third principle, that vulnerable localities apart from the protected bases should be fortified, is of more purely local interest; and much has been done throughout Australia by individual Colonies. In this case, the mistakes that may have been made are solely due to the same influences as those just mentioned with regard to the defences of the harbours, and it would be most unwarrantable if, with the experience gained, joint action is not taken in future to prevent them.

Without the embodiment of the fourth and final principle, namely, "That land forces should be available for concentration and joint action in any part of Australia," any scheme for the defence of Australia must be inadequate.

Without doubt there have been in the past, and there are still, most serious difficulties to overcome in giving this practical effect. Yet look at these facts. The military forces of each Colony exist, independent of one another, thirsting for the advantages which federation so plainly holds out to them, struggling against the uncertainty of the necessary supplies, and entailing an expenditure in administration far in excess of what

would be incurred if placed under one command. What is the real difficulty—this apparently insurmountable obstacle that bars the way? It lies in the absence of a supreme executive authority to which the commander-in-chief of the Australian federal forces would be responsible for the conduct of such forces in time of peace and war, and for the expenditure incurred thereon; consequently it would appear that until the supreme executive power for federated Australia is agreed upon and established, no final steps can be taken to bring about the federation of the defence forces.

The methods that have been suggested to overcome this obstacle, what they have led to, how far the obstacle itself has been already set aside by one Colony, and what remains to be done by that Colony and the other Colonies of the Australian group, form the subject-matter of this paper. The introduction has been somewhat long, but a fairly accurate knowledge of the subject is necessary to follow (a) What has been done, and (b) What remains to be done.

#### WHAT HAS BEEN DONE.

To give in detail a history of the measures for defence carried out by the several Australian Colonies since the granting of self-government, to tabulate the expenditure incurred thereon, or to criticise the methods employed and the experiments made, is beyond the limits of this paper. It is not intended to give information on *data* which are well known to so many, and which can be easily ascertained by those desiring to know. Roughly speaking, the six Colonies of Australia have for the past twenty years maintained on an average a force of about 20,000 citizen soldiers of all arms, more or less trained, at an annual cost of some £500,000; in addition, there has been considerable expenditure in fortifications, and for some years on the maintenance of local naval forces. This last has been much reduced since the formation of the Anglo-Australian squadron.

Further, to enumerate and to explain the number of Acts of Parliament that are in force, each differing from the other, the host of local regulations, the numerous systems of pay in vogue, the several methods of training employed, the varied conditions of service, etc., etc., would easily take up the space allowed by the Institution for a paper. But that all these varieties and incongruities do still exist in the face of the disadvantages thereby created, is sure and certain proof of the absence of united action.

We will proceed to review shortly the principal events which have led to whatever progress has been made, and to examine somewhat closely the most important of them, especially with reference to the removal of the great obstacle, the absence of an executive federal authority.

They are as follows:—

1. Action taken by the Colonial Defence Committee since 1884 in advising the preparation of local schemes of defence.



2. The formation of the Anglo-Australian Squadron.
  3. The visit of General Edwards to the Colonies.
  4. The joint agreement between some of the Colonies and England to fortify Thursday Island, King George's Sound, and Port Darwin.
  5. The Military Conferences in Sydney in 1894 and 1896.
- And, finally, the Passing of the Defence Forces Act, 1895, by the Colony of South Australia.

To the persistence shown by the Colonial Defence Committee in advocating their proposals, and the tact and patience exercised by them for many years, may be attributed much of "What has been done." Without the assistance of this committee, commandants were, and if they do not avail themselves of it still are, powerless to help, nay, worse than this, for if they can induce their Governments to follow their advice, when they place their own individual opinions above those of the committee, of a committee whose members are fully conversant not only with the resources of the Empire but with those of foreign Powers, it is only natural to suppose that they will break away from that uniformity of purpose and system which is so much needed, and which is being accepted throughout the Empire. It must be distinctly understood that commandants are not desired to become blind followers of the opinions of the committee; as a matter of fact, whenever local circumstances require modifications, or alterations from general principles, these, when proved to be necessary, are cordially agreed to. No attempt is made to interfere with such disposal of his forces as each commanding officer may consider necessary for strategical and tactical purposes, and for which commanding officers are held solely responsible.

The committee very gradually extended its influence, until at the present moment they practically advise on all matters appertaining to general defence. The solution of the difficulty of the Chief Federal Authority is a subject which is now being brought prominently before them by the passing of the South Australian Act and the results of its being put in force; no doubt if the committee approve of the system inaugurated and the methods employed they will exercise their powerful influence in inducing the remainder of the Colonies to follow on similar lines without delay.

2. *The Formation of the Anglo-Australian Squadron.*—No better example of the advantages to be gained by joint action on the part of the Colonies can be put forward, than that of the formation of this squadron. In the interests of Imperial commerce it was doubtless incumbent on the British Government to maintain a squadron in Australian waters; but as long as the Australian Colonies did not contribute towards the expenditure therein incurred, the British Government would not guarantee to leave that squadron to protect those waters. It became evident that possibly at the most critical time its presence might be required more urgently elsewhere, and the first line of Australia's defence would vanish. Realising this probability, individual Colonies tried the experiment of maintaining small fleets, very small fleets

indeed—in some cases one ship—of their own, and an attempt was made to let Australia feel satisfied that thus a substitute for the first line of defence was established. It is said, with, no doubt, considerable truth, that first the costliness of the experiment, including not only the original outlay in purchasing ships, but also the very heavy expenditure incurred in their maintenance; and that, secondly, the futility of striving to allay public opinion with the idea that so inadequate a number of ships could possibly be considered in any way competent to hold the command of Australian waters in the absence of the Imperial squadron, were two of the factors that weighed most strongly in favour of the agreement finally arrived at with the British Government. This appears to be borne out by the action taken by the Colonies since the agreement has been in force. The Colony of Victoria has greatly reduced its naval expenditure, it has sold two of its gun-boats, and now has notified its intention not to maintain the "Nelson." The Colony of Queensland has laid up its gun-boats, and it is said offered one to the Imperial Government. New South Wales has no sea-going fighting ships, South Australia has one gun-boat in full commission for a small portion of the year, and Western Australia has none at all.

On the other hand, under existing circumstances, Australia is guaranteed the protection of its trade routes, and is practically insured against not only an attack in force, but to a great extent from any other attack of a serious nature, so long as the necessary bases, well defended on shore, are maintained. Practically, it may be said that any one of the Australian ports is as well protected by the Anglo-Australian fleet as any port in Great Britain. The realisation of this fact accounts for the decrease in expenditure in local ships since the agreement, and it cannot be doubted that, except where navigable and extensive portions of water exist inside and out of range of the fire of the fortified entrances to harbours, no further purchase of fighting-ships will be indulged in while it is in force.

The maintenance of this agreement, and its expansion, if possible—that is, the undertaking by the Imperial Government of *all responsibility* with reference to the protection of the whole of Australian waters, except within harbours—is assuredly the very best defence that Australia can rely on. It seems a pity that this assurance is not given; if it was, much heavy local expenditure might be saved, and greater attention given to the very important subject, namely, the formation of a reliable and thoroughly efficient second line of defence. It is needless to say that this agreement is the very foundation of the proposals herein made for the Federal Defence of Australia. Without this first line of defence, or one equally efficient, Australia is liable to attack at any time.

3. Next in order comes *the visit of General Sir Bevan Edwards to the Colonies in 1889*. Sir Bevan Edwards' mission was a most important one. He was to inspect the forces of every Colony, and to study closely their organisation with the view of recommending a thoroughly sound system of co-operative action. It is not necessary here to enlarge upon

the merits of his report; suffice it to say that the organisation proposed in his report may be looked upon as the foundation-stone upon which any federal force of Australia will rest.

4. *The joint agreement between some of the Colonies and Great Britain to fortify Thursday Island and King George's Sound* has materially advanced federal action, inasmuch as in carrying it out many difficulties have presented themselves, and are gradually being overcome, and many lessons have been learnt which are of considerable value, as they will be of use in teaching us to avoid certain lines of action in the future. This is certain—that unless the sole command is vested in one head, that head to be responsible to the Governments concerned, federal action is not likely to commend itself to Colonial legislators. If local commandants insist on supreme command of federal forces within their Colony, while other contributing Governments also insist on exercising supervision through their commandants, it does not surprise one if results are not satisfactory. The experience gained in the conduct of this agreement further emphasises the necessity for Federation on a sound basis.

5. *The arrival of Colonel Hutton, C.B., A.D.C., as Commandant of New South Wales*, brought about the Military Conferences of October, 1894, and January, 1896. Without in any way detracting from the value of the services, either individually or collectively, of those who have held the very responsible positions of commandants, undoubtedly the deliberations of these two conferences (initiated by the mother Colony and no doubt instigated by its commandant), working as they did on the lines laid down for general guidance by the Colonial Defence Committee, led to reports embodying recommendations of a more practical character than had up to then been set forth.

Unfortunately, however, the one great obstacle was not overcome; the suggestions made for the establishment of a central directing authority, with power to act on the part of the joint Federated Colonies, have proved to be unpracticable. As to this there can now be no doubt. It may be taken as a general principle that the creation of councils or committees as a rule give rise to complications. Further, it is quite certain that no Colonial Parliament will, on any account whatever, delegate to any one of its members, or any other person, the power to act on its behalf in such a serious matter as the disposal and conduct of its troops in times of peace and of war; and, further, most naturally no Government would permit this prerogative being taken from its hands. The executive power of the Colony alone should and must have full control of its own troops. Such being the case, the proposal for a Council of Defence, as recommended, to overcome the obstacle, proved unworkable.

6. Early in 1895 the Government of South Australia instructed its commandant to *draft a Bill for an Act to Consolidate and Amend the Law Relating to Defences in South Australia*.

Among many, the following objects were specially kept in view in drafting the Bill:—

- a.* It was considered advisable to make provision for compulsory service throughout the Colony.
- b.* Persons voluntarily wishing to enrol were to be permitted to do so.
- c.* All portions of the Forces to be liable to service in any part of Australia and Tasmania.
- d.* Term of service to include a number of years in the Reserve.
- e.* Sufficient provision to be made for training.
- f.* The whole of the Forces to be subject to the Army Act and Queen's Regulations for all purposes of discipline at all times.
- g.* A minimum rate of pay to be fixed for peace and war time.
- h.* Clothing, arms, and accoutrements to be provided.
- i.* Compensation to men injured, and to the wives and families of those killed on active service.

And, finally, the establishment of Defence Rifle Clubs as a separate body.

Before proceeding to review categorically the results of the Bill, which became law in December, 1895, and has been in operation since June, 1896, it will be well to read the section which gives effect to *c* above. It reads as follows:—

“TERRITORIAL LIMIT FOR SERVICE.

“19. All officers and soldiers shall be liable to service in any part of Australia or Tasmania, but not elsewhere.

“20. The Governor may place the Forces, or any portion or portions thereof, for the purposes of drill exercise and training, or when called out for active service or as otherwise prescribed, under the orders of the Commander of Her Majesty's Land Forces in this province, or in any other place where the Forces or portions thereof may be required to serve, or under the orders of any other officer then in command of the land Forces of any other of the Australian Colonies or Tasmania.”

The Governor means the Governor-in-Council—that is, the executive head of the Colony for the time being. This head has power to enforce this section at any time, for drill and training as well as for war; the power is not restricted in any way, and, as a Colony cannot at any time be without such a head, the section can always be put in force. Now mark: If any other Colony passes an Act with a similar clause—say the Colony of Victoria—then it is open at once for the Governors-in-Council of the two Colonies to place their forces under one command, to effect interchanges of garrison if considered advisable, to assemble together for encampments and other instruction; in fact, to avail themselves of all the advantages that are claimed for federation. What is open to one Colony to do—nay, what one Colony has done—the other Colonies can do; and if they do, then all can be placed under one command.

The necessity for the formation of a specially appointed Council of Defence disappears, for, as a matter of fact, the Act constitutes the

executive power of each Colony which passes a similar clause into an *ex-officio* member of a council which it automatically brings into existence—devoid of the insurmountable difficulties attached to the creation of the one proposed and previously discussed.

But much more than this has been effected; the repeal of the three words, "but not elsewhere," in the section giving the territorial limit for service would at once enable the military forces of South Australia to become part and parcel of the Imperial forces, if so desired.

Now, it will be asked, how are these Forces to be governed if they are serving under different rules and regulations? Let me read to you Section 36 of the South Australian Act:—

"DISCIPLINE AND REGULATIONS.

"36. Every officer and soldier who shall have made and subscribed the declaration as directed under this Act shall be bound thereby during his term of service; and during such term, and until discharged and dismissed, shall be subject to the provisions of the Army Act in force for the time being in Her Majesty's Army as if he had been duly enlisted and attested for Her Majesty's Army for general service, and as if the Force formed part of Her Majesty's Army, and shall in like manner during the same time be subject to the Queen's Rules and Regulations, the Rules and Articles of War, and to such other rules, regulations, and discipline of whatever nature or kind to which Her Majesty's Army is for the time being subject, so far as the same are not inconsistent with this Act, and any rules and regulations made hereunder; and every officer of the force shall be subject to the like provisions, rules, and regulations, articles and discipline, so far as the same shall be applicable to his rank."

The next section gives the commandant power to summarily discharge any soldier who from his improper conduct shall, in the opinion of the commandant, be unfit to continue in the Force.

Now, it may be said that to place citizen soldiers, who are practically Volunteers, under the provisions of the Army Act and Queen's Regulations was a dangerous experiment—nay, high military authorities in the other Colonies did not hesitate to state that the section would not be passed, and that, if passed, men would not come forward for service. Well, the Government of South Australia thought differently. They held that for purposes of general discipline no better code existed than the Army Act and Queen's Regulations, that a few restrictions as to the punishments to which Regular soldiers are liable, and which might be too severe on a citizen soldier, were desirable and could be easily made by Regulation. That, further, the passing of this section obviated a different code of discipline being required in time of war. Not only was the section passed, but the men have come forward to join, and they have come to the natural conclusion that Her Majesty's Army Act, Rules and Regulations are in force for the purpose of giving full protection to the soldier, and not for that of being used to his disadvantage.

Is there any reason why the other Colonies should not pass a similar



section? And if so, would not a second great obstacle in the way of Federation be removed in an excellent manner? South Australia has removed it.

It is unnecessary to further point out what provisions the South Australian Act makes to simplify and make it easy to assimilate systems of training, method of payment, etc., in order to further Federation; but, after all, these are only matters of administration. The one chief, all-important object of overcoming the obstacle of the want of a supreme authority to whom the Commander-in-Chief would be responsible is achieved. The existing executive power in the Colony is the supreme authority—it is the head now for each Colony. There is no need to create anything new. On the Governors-in-Council of two or more Colonies empowered by similar Acts agreeing to act together, *ipso facto* they form the Executive Council for Defence, to whom the military head would be responsible. Is there any need, then, to wait for political Federation; would it not be better to follow the example of South Australia?

The time has now come to examine whether, under the provisions of the South Australian Act, if adopted by the other Colonies, a reliable Military Force for Australian Defence can be raised. If the Act can accomplish this, then another most important difficulty has been overcome. What are the questions that require satisfactory answers? They are as follows:—

- a. What is the Strength that can be raised?
  - b. What Constitution of Forces does it allow?
  - c. What Organisation is proposed?
  - d. What are the Conditions of Service?
- And, finally, what mode of Training is provided?

a. *What is the Strength that can be raised?*—It, no doubt, has surprised some of you that the Government of a self-governed British Colony should introduce into Parliament a bill proposing compulsory military service. Yet this was done, and in some quarters it was believed that if the Government had considered it necessary, and had pressed the point in the House, it would have been carried; still, if at any time it is found that it is necessary for the defence of the Colony to put the section as passed, namely, that such compulsory service may be enforced in case of invasion or of imminent prospect thereof, into force, it will be readily answered to throughout the Colony. Similar provisions in the Acts of other Colonies would place at the disposal of the Government more than sufficient numbers for the defence of Australia—for the whole manhood of Australia would be available. It has been found, however, by practical experience that even with the slight remuneration offered at present for service, a mere nominal sum, there are more applicants for voluntary enlistment than the funds at the disposal of the commandant allow him to enrol. It is then clear that more than ample provision is made for the raising of a sufficiently numerical force under the provisions of the Act. Now, on what basis should the strength of the Forces of Federated Australia be determined? Well, that is easily answered by ascertaining

what duties devolve upon them: first, the adequate defence of the bases of operation required for the first line of defence; secondly, the adequate defence of other vulnerable localities apart from these bases; and, finally, the possession of a well-organised Force, capable of being concentrated wherever required, its strength being determined by the nature of the anticipated attack. The actual numbers required for these duties vary, of course, in each Colony, and it would be the province of the Commander-in-Chief to advise thereon. Time does not permit the consideration of these details now.

*b. What Constitution of Forces does it allow?*—At the time of the passing of the South Australian Act there were no less than six separate Acts in force. The Forces of the Colony, numbering altogether about 2,000 men, were composed of Regular soldiers, Militiamen, Reserve Militiamen, mounted riflemen under a combined system of Volunteer grant and partial payment, pure Volunteers, and rifle clubs. These had each separate regulations and standing orders. It was needless to say that the administration of the Force was a matter of considerable trouble and expense. Further, the working together of this Force invariably gave opportunities for comparison as to the difference in their pay and allowances—causing endless growling and dissatisfaction. The general public knew that, roughly, the military Forces were composed of Regulars, Militiamen, and Volunteers; this nomenclature practically included the several branches. Now, whenever the question of supply came under discussion, and the exigencies of the public purse necessitated the application of the pruning knife, the friends of each of these branches of the Forces set to work to save themselves at the expense of the others. Members of Parliament interested in the Forces naturally advocated the merits of the branch they represented. When Parliament as a whole found that those of their number who were looked upon as taking special interest in the welfare of the Forces were divided among themselves, they naturally supposed that there was something wrong somewhere, and the pruning knife was applied with greater force. Let anyone read the debates in any of the Australian Parliaments of late years, when the military sub-estimates have been under discussion, and a reduction of the vote has been proposed, and they will soon be convinced of the truth of this statement. Is it not even so in Great Britain itself? Has not this had a bad effect here, where the numbers are large enough to command respect, and where Parliament is accustomed to listen to the grievances of the several Forces? It will hardly be disputed that it is so. Australia does not want these distinctions. The Australian citizen soldier wants to serve on the same terms as his comrade, and as soon as a simple solution of this difficulty was arrived at it has met with success. The whole of the South Australian Forces are now members of one Force, all under similar regulations, system of pay, mode of training, etc. They are called the Military Force of South Australia. They are neither Militiamen, nor Volunteers, nor half-and-half. They are simply divided into so many officers and soldiers permanently employed, so many Active and so many Reserve officers and soldiers. The conditions of service, to be

explained further on, will clearly explain their relative responsibilities. What is the result? The whole of the power and influence of those interested in the welfare of the military Forces is simultaneously directed for its benefit, with beneficial results, and a simple and practicable constitution suitable to the requirements of the Colonies and economical in its administration is ensured.

*c. What Organisation is Proposed?*—It is needless here to enter into this subject, beyond laying stress upon the fact that the South Australian Act in no way restricts or lays down anything that can interfere with whatever organisation is considered, or may be considered, advisable by the officer or officers responsible for the organisation of such Forces as may be considered necessary to carry out the triple duties required of an Australian Federal Force. The question of organisation is so subject to the requirements of the times that it would be unwise to hamper those entrusted with carrying it out by provisions in an Act of Parliament. A proposed military organisation for the Movable Federal Force, based on general principles, exists; its details, however, are liable to considerable criticism.

*d. What are the Conditions of Service?*—The one dire difficulty, the one stumbling-block that has militated against the success of every one of the forms of service that has been tried in Australia (and there have been many), has undoubtedly been the absolute failure of creating the formation of a Reserve of men who have been efficiently trained, who would be occasionally exercised, and who could be absolutely relied on to join the colours fully equipped in case of emergency. One may well ask what becomes of the numbers of men who pass through the ranks of the local Forces. The answer is, that they either rejoin for further period of service in the active corps or else they go altogether, and there is no provision to make them join a Reserve proper. All sorts of plans and methods have been tried without success. Strenuous efforts have been made by the granting of bonuses, and by other enticing inducements, to raise a reliable Reserve in, it may be said, every Colony, with similar results—failure. Now, it would appear as a sound principle that the object to be achieved in the training of citizen soldiers for home defence is to instruct and render efficient for service as many as possible of the young male population without interfering more than necessary with the manhood power engaged in the performance of the various industries of a nation and in their other duties as citizens, and then to render each youth thus trained liable to service in the Reserve for a considerable number of years, and while so serving to ensure his maintaining a certain degree of efficiency by enforcing a specific short course of training at stated periods. This is the principle guiding the period of service demanded of the South Australian soldier under the new Act. Every man shall serve for a period of five years, two years in the Active Force and three years in the Reserve. It may be advanced that three years is too short a period, but it must be remembered that seven years is, on the other hand, rather too long a time for young men to bind themselves for. Then

when their five years are up, and the Reserve Force is in a healthy condition, it will doubtless be found that many will rejoin for a further period of five years in its ranks. It is difficult yet to determine what success will attend this period of service; but if one can judge from the success that has attended recruiting in South Australia up to date, there seems to be good reason to hope that this system has come to stay.

Now, as to pay and allowances. Here, again, the different systems in vogue throughout the Colonies are so numerous, that it is impossible to give them in detail here; but for purposes of illustration they may be divided into three classes:—1. The Regular Forces. 2. The partially-paid Forces. 3. The Volunteer Forces.

With reference to the first, the system is based on the Imperial Regulations, except, of course, as to amount.

With reference to the second, the system may be described thus. A soldier can earn a certain amount per annum; to earn it he has to attend certain parades; for those he attends he must be paid at a fixed rate according to its duration; if he does not attend, and is absent without leave, he may be fined. The most obvious fault of this system is that whenever a parade is ordered, and the weather necessitates its dismissal, the men get their pay, but do no work. This may sometimes happen two and three times in a quarter. The men live too far away to allow any warning to be given that there is to be no drill. They parade. They must be in fairness paid. But a much more serious disadvantage accompanies it. A certain sum is placed at the disposal of the Military Department at the beginning of the financial year for the purposes of pay. It is, perhaps, found that the revenue is not coming in as freely as expected. The pruning-knife begins its work; the Government order that only a certain portion of the amount originally set aside shall be expended—result, the stoppage of parades, or, at any rate, of a portion of them. Now, a system of payment that allows such a thing to happen cannot under any circumstances be considered satisfactory.

Thirdly, the Volunteer Forces. This follows fairly on the same lines as the Volunteers in Britain, but it does not work satisfactorily. The reason for this is easily found. As a matter of fact, the Volunteer Forces are principally raised in the country districts, the officers are in many cases not sufficiently acquainted with the Regulations, in other cases they are easy-going good fellows, with the result that in very few cases are the capitation and other funds of the companies administered according to Regulations, and endless disputes and misunderstandings arise with the supply of clothing, the payment for same, etc., etc.

Now here again the object aimed at by the South Australian Act is to establish a system of payment which will eliminate all the disadvantages above named, that will guarantee the soldier a certain wage if he does all he is wanted to do; that that wage will be for his own personal use, and that only those who do the work shall receive the wage; and, further, that the method of payment being the same throughout the

Force it will be carried out expeditiously without unnecessary returns and expense.

In the first place, the Act lays down a minimum rate of pay, it also lays down the number of days' training that a soldier must do if he enlists. Consequently, if a man is enlisted, it is of no advantage to stop his drills; on the contrary, it would be a wicked waste, as the man would have to be paid all the same. The only way to effect any useful economy would be by the disbandment of a large body of men—a step which is very difficult at times.

Secondly, any man not completing a fixed number of drills not only gets no pay but is liable to fines, and heavy fines too; consequently, excellent attendances at drill are ensured, specially as the men are not allowed to choose what drills they attend with a view of completing the number required. They have to attend drill the day on which the drill is ordered, they have to class-fire when ordered, and they have to attend camp. Uniforms are provided by Government, and are expected to last the period of service.

Provision is further made for the issue of special pay, in order to enable men who do extra work, such as harness cleaning, recruit instruction, etc., to be adequately remunerated.

The system adopted has proved a success as far as it has been tried. From an administrative point of view it has worked admirably, and will commend itself to whoever is entrusted with the command of the Federated Australian Forces.

Finally. *Mode of Training Provided.*—Section 26 of the Act reads as follows:—"Every soldier shall attend the number of drills prescribed, which shall not be less annually than twelve full days of five hours and upwards (in the aggregate) including :—1. One inspection in each year, unless prevented by illness, absence with leave, or some other reason to the satisfaction of the commandant. 2. Attendance at the annual encampment. 3. Musketry instruction.

"But the Active Force, except when called out for actual service, or otherwise prescribed by the Act, shall not for the purposes last aforesaid be called out for a greater number of days of five hours and upwards, and of half days of from two hours to five hours, than shall in the aggregate, including inspection, attendance at the annual encampment, and musketry instruction, amount to twenty-four full days in any one year, in addition to those required for recruit drill, and drill otherwise than during daylight; and the Reserve Force, except when called out for actual service, or as otherwise prescribed by this Act, shall not for these purposes be called out for a greater number of full days or half days as aforesaid than shall in the aggregate, including inspections, attendance at the annual encampment, and musketry instruction, amount to twelve full days in one year, in addition to those required otherwise than during daylight.

"Nothing in this Act contained shall prevent the Governor from calling out any officers of the said Forces as often as he shall think fit for the purpose of special drill or instruction."



As an example of the manner in which the training is carried out, an appendix giving the syllabus of drill and instruction for one quarter is hereto attached. The only other remark that appears necessary is, that as the training is carried out throughout the whole year, it is difficult to find sufficient time for the carrying out of the maximum number of drills in addition to those required for recruit drills and otherwise than by daylight.

Gentlemen, what has been done to prepare the way for the Federation of the Australian Colonies has been placed before you; it is necessary now to point out:—

#### WHAT REMAINS TO BE DONE.

Taking into consideration that the greatest obstacle to the federation of the existing military Forces is the absence of a supreme authority to control its destinies, or rather the creation of a supreme authority, such as can effect this federation without waiting for the final economical and political union of Australia, it would seem that the first step to be taken—nay, which must be taken—is the passing of Acts of Parliament by the remaining Colonies concerned, embodying sections similar to those already in force in the South Australian Act; at any rate, as regards (a) the territorial limits of service (b) the powers of the Governor to place the Forces under the command of any officer, either of the Imperial or Colonial Forces, anywhere in Australia, or wherever required to serve, and (c) the adoption of the Army Act and Queen's Regulations as the standard of discipline. It would doubtless seem advisable to go further, and accept the constitution of the Forces, the conditions of service, and the mode of training which are proving so successful in practice both from an economical and efficient point of view under the Act referred to. No doubt it will be urged that considerable opposition will be offered to the making of what may be called such drastic changes in the systems which have been so long in force. Well, if these systems have been tried for so long and found wanting, all the more reason for the drastic changes, and the sooner the changes are brought about the better, for if not the evil will only increase in intensity with a longer life, and will become more difficult to overthrow.

Now, how can this be brought about? In the first place, Imperial authorities should express a decided opinion as to the merits of the Act passed by the South Australian Government. If this Act meets with their approval, a strong effort should be made to induce the Governments of the other Colonies to introduce and pass the necessary Acts without delay. To further this good object an officer might be specially selected and appointed to draft the necessary Bills with the one great object of attaining uniformity. It is indeed possible, nay, very probable, that this proposal may meet with much opposition from individual officers in command of the several Colonies. On the other hand, it is quite plain that as commandants only hold their command for a limited number of years, which period is not necessarily concurrent, it is useless to expect that an absolute unanimity in their views is ever likely

to take place. What is required is a first-class system for the home defence of Australia as a means of strengthening the chain of Imperial defence. It is by no means suggested that the system introduced by South Australia is the best that can be devised. If there is a better, by all means let it be brought forward and adopted; but whatever that system may be, it is most urgent that it should be given effect to unanimously without delay, and then the commandants can be directed to carry it out in its integrity.

The next point to be considered is a very important one. It will be remembered that it has been strongly recommended that the Imperial authorities should make it the duty of the Anglo-Australian squadron to undertake the whole of the responsibilities of the first line of defence, and thereby remove the feeling that there may exist a belt of waters between recognised trade routes and certain ports over which they do not guarantee to exercise supervision, with the result that it appears necessary that the Colonies, where such waters may be, shall maintain fighting-ships at a very heavy expenditure, which expenditure, it has been urged with considerable force, does not return a fair *quid pro quo*. Yet it must be borne in mind that there does exist in Australia a splendid body of seamen, equal to any in the Empire. The coasting trade of Australia employs thousands of men—thoroughly competent seamen in every sense of the word—ready and willing to be trained to take their share in the defence of their country, and of the Empire if necessary. Now, are the services of these men to go to waste? Cannot they be trained (as a matter of fact they are trained now) with the view of forming a Reserve to supply, in case of war, a portion at least of the complement of the Anglo-Australian squadron? Cannot they be allowed to carry out that training on board some of the ships of that squadron which year after year are permitted to be laid up in Sydney Harbour? Would not such training be of greater value than that they get now, inasmuch as they would be taught the use of more modern appliances? These are serious questions, and a scheme that would combine the utilisation of such excellent *personnel* for purposes of the Anglo-Australian squadron, and which would relieve individual Colonies of the responsibility of maintaining local men-of-war, would hit the right nail on the head. As a matter of fact, the Premier of South Australia has laid a scheme before the Imperial Government whereby advantage may be taken of the services of the large body of Australian seamen for Naval Defence purposes. Its details are not known, but if it achieves the object desired let it be hoped it will meet with ready support.

There are many other things that remain to be done. There is the establishment of a small-arms and ammunition factory; and if that is established, why not manufacture ordnance? And in this most important matter to Australian defence would it not be to the advantage of the whole Empire if the Imperial authorities became partners in the venture with the Australian Governments, and founded depôts of war materials available for use in India and other dependencies?

But enough for the present. Let what is now suggested here be

done, and done well, and the rest will—nay, must—follow as a matter of course.

Now, critics of these remarks may well say, "All this is very nice, but what about funds? The very worst feature of the present system is the uncertainty of supply." Here again experience teaches us an excellent lesson. On every occasion when Colonial Governments have jointly undertaken any expenditure, and the basis of contribution has been fixed upon, supply is readily granted. The only sure cure for the evil of uncertain supply is the adoption of a joint system of defence which, by its thoroughness and merits, will commend itself to the people. Let Australians be convinced that a scheme of defence, sound in conception, efficient and economical, is to be adopted, and men and money will not be wanting.

Perhaps the following passage from one of Captain Mahan's works will fitly close this paper:—"Colonies attached to the mother country afford the surest means of supporting abroad the sea power of the country. In peace the influence of the Government should be felt in promoting by all means a warmth of attachment and an unity of interest which will make the welfare of one the welfare of all, and the quarrel of one the quarrel of all; and in, or rather for, war by inducing measures of organisation and defence as shall be felt by all to be a fair distribution of a burden of which each reaps the benefit."

The CHAIRMAN:—Before the discussion commences I should like to say that I have received a letter from Lord Kintore, the late Governor of South Australia, who regrets extremely that he is not able to be present here to-day; and speaks in the highest terms, from a long-standing knowledge of Colonel Gordon, of the excellent service he is rendering by bringing this subject forward.

Captain Sir JOHN COLOMB, K.C.M.G. (late R.M.A.):—I am sure that we all agree in most heartily welcoming an officer, and a very distinguished officer, of the Colonial Service under the Queen, as a lecturer in this Institution. I think we are under a great obligation to Colonel Gordon for giving us so much valuable information, and reducing into so small a space the past and the present condition of the organisation of the Australasian forces. Students of this subject know how very difficult it is to get accurate information on these points, and therefore I may be permitted to congratulate Colonel Gordon upon the admirable manner in which he has prepared his paper, giving as it does so vast an amount of valuable information and suggestion. But I think nobody will dispute the general conclusions at which he arrives and which he enforces with so much power, namely, the absurdity—there is no other word for it—the absurdity of arranging for the defence of a contingent—I am speaking of the internal defence—in watertight compartments of the several Colonies, separated from one another, dissociated from one another, and yet all desirous of maintaining and securing the common object, which is really the defence of the whole. It takes a long time to bring about the most common-sense changes. As a watcher of this problem, and questions of this nature, for a very great many years, I am bound to say that I am almost driven to think that the consolidation of the war power of the Empire, be it in Australia, be it in Canada, or be it in any part of our Empire, will not be really understood or faced until we are under the pressure of a great emergency. Much is done, no doubt, to enlighten and to educate and to enlarge the popular mind, because, after all, it is the popular mind that rules through Parliaments, whether home or colonial, what measures and precautions are to be taken for defence. But while I see that Colonel Gordon and many other

able officers in Australia are shaking themselves clear of many fallacies which we at home have been largely responsible for creating, I notice that Colonel Gordon does not bring prominently forward the fact that the initial mistake from which Australia now suffers in this matter of the organisation of our military forces, and, indeed, the general principle of the defence, was due to the thoughts prevailing in this country at one time, and which were certainly the cause of a wasteful expenditure of money. I principally allude to the time when that very distinguished man, Sir William Jervois, was invited by the Colonies to go and advise Australasia. That was the initial movement, as I think, of a real effort on the part of Australia with regard to her defence. Sir William Jervois was sent to advise each Colony separately. We were at sea in this country, entirely and absolutely, with regard to the primary principles of defence, and, naturally enough, we took no heed to instruct Sir William Jervois that while he was invited by each individual Colony to advise for the defence, it was his clear duty to advise for a combined defence, and not for a series of independent defences. But the false principle then prevailed—the idea, a fallacious idea, that somehow or other forces might descend upon Australia, military forces coming from where no one could describe, but which were to come and to be thrown on their shore. Happily, that idea has vanished, or is in process of vanishing; for I notice with what marked emphasis the lecturer has dwelt upon the fact that, after all, any Power attempting to land any force worth mentioning on the coast of Australia must first wrest the command of the sea from us. But I would really ask Colonel Gordon to consider this: that being so, is the military duty of Australia to be confined simply to sitting down and waiting for attack in Australia? Is it to wait for an attack which, if the mastery of the sea is secured, cannot come? Now, I understand the policy that should prevail in the minds of Australian officers is this: given the command of the sea, admitting that small raids may take place of a military character, what would be the position of Australia and of the British position in the Pacific in the event of a great war? Well, as I understand it, I think the position would be this, that our objective, of course, would be the enemy's fleet and the enemy's harbours. That I need not enlarge upon; it is admitted. Now, what arrangement is Australia making, from a naval point of view? Touching upon the incidental reference to the Australian agreement, I say, what is the present position of Australia and the Australian idea upon that point? It is founded upon a false conception, and that is in the insistence—the steady insistence—of limiting the puny, small contributions and efforts of Australia for maintaining British power at sea to a narrow water area round Australia. Supposing, out of events that are now passing, we had to apply the principle of the enemy's ships and harbours, it would be for the protection of Australia and the whole Pacific. Where you want Australian naval power expressed in terms of ships would not be round Australia, but probably in the north of China. Therefore, I cannot but say this, that I most exceedingly regret that our Government has been weak enough during the last year to enter into a compact for the renewal of arrangements based upon such a false principle of naval policy. Passing from that, what is involved under the condition of things when the Australasian war forces think they will be called upon to act? What would be the conditions? Well, I think they would be these: There is a vast ocean, an enormous ocean—another hemisphere, in fact—in which Australasia fills up in a large measure the chief land feature. The attack is to come from somewhere. The lines of communication of the military attack I am speaking of must be enormously long, the lines of communication of a naval attack on Australia must also be enormously long. What is the very first thing a Power contemplating any descent at all must prepare for? Why, it is the establishment of advance bases not very far from Australia. And what then would be the essence of the defence of Australia? That they shall not be allowed there, and that if they do

attempt to establish a point of vantage there they shall be immediately smoked out like rats. Very well, is the action of your forces to be confined to sitting down and waiting in Australia? No. Therefore, what is the use of limiting the service of Australians for the defence of Australia to Australian soil? What will be the want, I maintain, in maritime war in that ocean, will be a small mobile military force at the command of the admirals. That is what is wanted. Is Australia organising, or is she contemplating organising, the means necessary to give any help? It is from that wide point of view that I regard this question, and I do trust that distinguished officers like Colonel Gordon and many others will try and enlarge the understanding of the forces in Australia, and try and enlarge the minds of the politicians and the people of Australia. Great and formidable as Australia is, it is wrong her trusting simply and solely to the protection of the mother country, provided by funds drawn only from the pocket of the mother country. Are men available for general purposes to be provided only by the mother country? To my mind the destiny of Australia is something wider and nobler than sitting down and waiting, with however perfect an organisation, for an attack which may never come. To my mind Australia should recognise that in the other hemisphere, if the British power is to survive in the generation that is to come, she has a duty to perform outside Australia in our great Empire. It is her duty now to prepare for it, and, therefore, I hold that every man who speaks or writes on this question should aim solely and wholly at producing that recognition of facts in the minds of the Australian people, that they shall prepare to meet not imaginary necessities of war, but the real necessities of war, so that when danger threatens any part of the Empire, the word can go forth, "Come over the sea and help us, and do not skulk at home," and not to say, "We are only prepared if anybody comes to attack us." If I have spoken strongly it is because I feel strongly; but I do most sincerely congratulate the lecturer for coming here. We advance by slow degrees. I have studied this question, and watched Australian feeling and Australian and other Colonial Acts of Parliament for a very long time, and I am delighted to see the gradual expansion of the minds of the people; but I must say I should like to see it move a little faster. With regard to the limitation of service, in asking Australasian peoples to release the fleet from those trammels the politicians have put round it, I ask them also to consider the necessity of releasing the Australasian soldier from mere territorial service at home. Let me remind you that in Canada—and here comes in the influence of land frontier and a sense of real danger operating in the minds of the people—there is no limit to the area of service at all. There is compulsory service for the whole manhood of Canada, and there is no limit at all to the area of service once it is called out. That is the principle. I do trust that Colonel Gordon will use all that great influence which his commanding position deserves, and that on his return he will do his best with the other commanders and officers to take that wider and broader view of the duties and responsibilities of the Australian soldier.

Lieut.-General Sir ROBERT GRANT, K.C.B., R.E., *p.s.c.* (Inspector-General of Fortifications):—I have been much interested in the remarks that Sir John Colomb has made, but he has gone perhaps into a wider field embracing the whole of Imperial defence than is actually apposite to what I take to be the intention of the lecturer, and to what the lecturer has said. Much of what Sir John Colomb has said is very true, but the lecturer has pointed out—perhaps before Sir John Colomb came in—that practically the freedom which he wishes for Australian forces is given by the Bill which has passed the South Australian Legislature. I speak, I may say, in my individual capacity, and not in my official capacity. The lecturer has shown that this one portion of the great Colonies of Australasia has tried to deal with a problem which troubles us in this country just as much as in the Colonies, and that problem is—and that, I take it, should be done by the authorities in this country—first to



establish for what purposes we keep our forces and for what purposes we are to use them, and having come to that point, to raise and organise a moderate force in peace-time which shall be capable of expansion with trained men in time of war. The difficulty has been rightly pointed out by Colonel Gordon, and it extends not only to the Australian but, to my knowledge, to all the Colonies, that is, to keep your hold upon a floating population so that it shall be available for reserve when you want it. I am bound to say that this Bill which has been passed by South Australia—without endorsing every provision that it makes—seems to me to be far in advance of anything that has been passed by any other Colony, and I am almost inclined to say that it is a little in advance of anything we have passed in this country. The system proposed is only beginning, therefore we must not cry till we are out of the wood. We have not had sufficient time to see the result of the experiment, but that this force, with sufficient attention to drill, to shooting, and to marching, will meet the requirements I think we can have no doubt. It is true—it is an axiom, a truism, I may say—that defence is best secured by the power of offence, not always necessarily by exercising that power, but at all events by having the power; and this Bill gives this one Australian Colony the power. If that is extended to other Australian Colonies, and other Colonies of the Empire, we shall arrive at the very point which Sir John Colomb has very rightly urged is an important point in the defence of this country, and that is the power of enlisting not only the sentiment but the strength and manhood of the Colony in the defence of this country. Further, it has this advantage, that it brings prominently before the Colony the necessity of keeping men. I do not want to follow Sir John Colomb into the remarks he made with regard to my friend, Sir William Jervois; but this I must say, that experience has brought it very strongly before me, that fixed defences are a convenient form of spending money in what I may call “spasms,” and that we ought to bring before ourselves first, and before the Colonies and dependencies of this great country afterwards, very prominently the fact that fixed defences without men are absolutely useless. Men without fixed defences, according to the efficiency of those men, form an efficient defence. I do not think I need trouble you more, but I may say that from my point of view I am glad that the South Australian Colony has passed this Bill, which promises so well for the strength of the Colony and the strength of the nation. I agree very much—I may say almost entirely—with what Sir John Colomb has said about the necessity, the absolute importance, of getting rid of the fallacy that any naval force can be kept to defend any particular water; that a contribution of the Colonies to the great Navy, even when that contribution is small, as an earnest of good-will, is a great thing, but that contribution, to my mind, should never be hampered with the proviso that that squadron is to be kept to any part of this habitable or uninhabitable world. I wish, not on my own account, but on account of the Colonial Defence Committee of which I am president, to say that I am glad to hear from Colonel Gordon that its advice is appreciated. It is not a committee of members from one particular body, it is a joint committee, and that seems to me the only way of securing a consistent policy. No single officer, however talented, who comes to advise a colony—and that has been the practice a few years ago—can either know exactly what has happened before nor can he advise consistently. I believe the great benefit of that committee—which to my regret, I am shortly going to leave—is that it has kept before all the Colonies a consistent and continuous policy under which, though the advice may not have been as great as we could wish, yet I think from my knowledge of the last seven years that it has been very good. Just one word. As I am talking of the Colonial Defence Committee, I should like to express my regret at the loss of Sir Robert Meade, who was the earliest founder of that committee, and who has been a great supporter in every possible way of both the naval and military policy and of the Colonial forces also.

Colonel E. T. H. HUTTON, C.B., A.D.C., *p.s.c.* (Assistant Adjutant-General, Curragh District):—I must first begin by congratulating my late

colleague in Australia, Colonel Gordon, upon having brought this most important question before an audience such as this. But, at the same time, the position which Australian federal defence now holds in Australia is very different indeed from the position it held a few years ago. It is practically now merged in the greater question of federation upon the larger issue, and it is due to this federal defence question that federation itself for Australia is so far advanced. I must take Colonel Gordon to task for not having placed sufficient emphasis on the very great importance of the visit of Sir Bevan Edwards to Australia in 1889. His visit to Australia in 1889 was brought about by the desire on the part of the delegates from the various Colonies in Australia expressed at the Colonial Conference of 1887, and it was in response to their wishes that Sir Bevan Edwards was sent by the Imperial Government to report on their defences. His arrival in Australia marked, and I say so advisedly, an important epoch in the development of Australia. It gave the then Premier of New South Wales, that great statesman, Sir Henry Parkes, the opportunity he had seen was wanting for urging upon Australia generally the necessity of creating out of the various elements of the different Colonies one nation. When the defence question was so aptly brought forward by our chairman to the notice of the Australian Governments by his visit, his speeches, and by his report, the opportunity arrived, which enabled Sir Henry Parkes to raise the whole question of Australian Federation. Thus it came about that Sir Henry Parkes devoted the later portion of his life to the Federation of Australia. Due to various causes, however, Federation did not get beyond a certain stage of development until in 1893, and early in 1894, the New South Wales Government, under Hon. G. H. Reid, as Premier, again urged the question of Federal Defence; and it was due to their initiative that Australian Federal Defence has taken the present prominent position, which has, in its turn, led to the existing development of Federation upon the larger issue. Very proper and right it was that New South Wales, as the mother colony and as the richest Colony in Australia, should take this leading part. The military conferences in 1894 and 1896, alluded to by the lecturer, consisted of the military commandants of each Colony, and were assembled at the suggestion of New South Wales, and to these conferences were submitted by New South Wales the whole detail of a system which might be made applicable to existing circumstances exactly upon the lines, as it happens, just described by Sir John Colomb. The conferences accepted, with few amendments, not only the scheme of defence for Australia submitted to them, but also the organisation proposed by New South Wales as necessary for carrying that scheme of defence into operation—firstly, for forming a federal force out of the existing military forces of the various Colonies; and, secondly, for indicating how the military force thus created might be utilised and controlled in time of national emergency. It was proposed that a Council of Federal Defence should have the direction of the federal force as regards details of equipment and organisation during peace, and of control during war, pending the adoption of Federation upon the larger issue. My friend, Colonel Gordon, has been, with reference to this question of a Council of Australian Federal Defence, somewhat inconsistent. The Defence Bill passed by South Australia was framed entirely upon the provisos of the Federal Defence Agreement submitted by the Government of New South Wales to the Conference of Premiers at Hobart early in 1895; and to South Australia is due the credit of at once seizing upon the salient point of that Federal Defence Agreement in the Bill which Colonel Gordon has described to you. Much to the astonishment of many in Australia, myself included, this far-reaching Bill—I say so advisedly—this remarkable Bill, was passed through the Legislative Assembly and the Legislative Council of South Australia, during 1895, so that at the second military conference in 1896 the commandant of South Australia was able to stand up and inform the Conference that South Australia had already framed and passed a Bill which practically embodied the whole sense of

the draft agreement which the Conference had then assembled to consider. I must, therefore, congratulate, in all sincerity, the Commandant of South Australia for the very prominent part he, no doubt, took in the framing of the Bill, and for the perseverance and energy which he showed in inducing his government to carry it through. Colonel Gordon in one part of his paper has pronounced judgment upon the Council of Federal Defence proposed by the N.S.W. Government, and accepted by the military conferences, of 1894 and 1896, of which he was himself a member, and the creation of which is actually included among the provisions of the Bill passed by his own Colony. He states in one portion of his paper that this Council of Federal Defence has been tried and found "unworkable." In this, Colonel Gordon labours under some misconception; such a Council has never been tried, and it has never, therefore, been found "unworkable." The necessity for this Council of Federal Defence has never actually existed, because the labours of the military conferences have been successful beyond all anticipation in bringing Federation within measurable distance of accomplishment, and of having at least practically produced the Bill for the Federal conventions which are now being held in each Colony. So the necessity for the creation of a Council of Federal Defence has never arisen! I must, consequently, ask my distinguished friend to modify that portion of his paper which deals with the impracticability of such a Council of Federal Defence. I might, perhaps, remind our lecturer that history, ancient, modern, and contemporaneous, abounds in instances of Federation undertaken by independent States for defence, and in instances of alliances for defence between states, who, otherwise, have no sentiments or feeling in common. What difficulty exists, therefore, why the Colonies of Australia, by some carefully devised scheme, should not also combine together in a system of federal or co-operative defence? There is one expression which I distinctly take exception to in the paper, which occurs repeatedly! It is this, "Anglo-Australian." Now, gentlemen, there is just one point, in which I think Colonel Gordon will agree with me, that Australian soldiers are most proud of, and that is, that they are included in the expression, "British soldier." There is no greater compliment you can pay Australian soldiers than to tell them that, besides being "Australian soldiers" they are "British soldiers," and that as such they inherit all the great traditions which attach to the British Army serving Her Majesty the Queen in all parts of her vast dominions. I therefore take the greatest possible exception to the expression "Anglo-Australian," and hope that in the revised proof this expression may be removed. At the end of his paper Colonel Gordon has referred to the importance of a small-arms and ammunition factory, and to the necessity of the Imperial Government co-operating with the Australian Government in the establishment of such a factory. Not only do I share the view of the lecturer as to the advantages of a joint small-arms and ammunition factory in connection with British naval, as well as Australian military requirements, but I very strongly feel the absolute importance of the great principle of a co-operative system of defence generally, which shall include not only Australia, but Canada, Africa, and all portions of Her Majesty's dominions. Believe me, the time has arrived when this question should be dealt with in a bold, comprehensive spirit, and I trust from what we have just heard from Sir Robert Grant that this may be within measurable distance of accomplishment, and that the public may be informed ere long of some recognised system of Imperial defence, or perhaps I should rather say some military policy of defence based upon the naval policy which has already been declared to the whole world. There are many minor points in the lecturer's paper which it would be easy to criticise, but there is no time available for entering into minor details. I do, however, sincerely trust that Colonel Gordon will, as Sir John Colomb has pointed out, endeavour in Australia to educate the Press, and, through the Press, to educate public opinion to the great principle that the defence of Australia is not the defence of Australian soil. It has always been the principle in the history of

Great Britain that, being an island, its defence has always been successfully maintained by means of a vigorous offensive, and that the defence of Britain has been fought out on other than British soil. This same principle is equally applicable to the great continent of Australia, and the more that point is insisted upon the more clearly defined will become the absolute necessity for not only the federal defence of Australia, but a co-operative defensive system also, which shall embrace all portions of the Empire.

General Sir HENRY NORMAN, G.C.B., G.C.M.G. :—I am sure we have all heard with great satisfaction Colonel Gordon's able paper on the Federal Defence of Australia. I do not intend to say very much upon the subject; but I think, in justice to Queensland, I ought to point out that the South Australian Act, which we saw passed in 1895 with so much satisfaction, and which is now claimed by Colonel Hutton to be the offspring of the recommendation of the committee which met at Sydney in 1894, is for the most part based upon an Act which was passed in Queensland as far back as the year 1884. That Act was due to the efforts of Colonel French, of the Royal Artillery, who was then commanding the forces in Queensland, supervised by Sir Samuel Griffith—the then Premier of Queensland—who has always taken the greatest possible patriotic interest in the defence forces of his own Colony. That I may not take more credit for Queensland than it is entitled to, I will just mention that in the Act of 1884, amongst other things, it was ordered there should be a defence force in Queensland, consisting of all the male inhabitants between the age of sixteen and sixty years, where not specially exempted. That was, in fact, compulsory service, if necessary, throughout Queensland. Authority was given to the Governor to call out the defence forces, or any part thereof, for active service in any part of the Australian Colonies, either within or without Queensland, when it appeared advisable to do so by reason of war or invasion—or danger of either—and the active forces might then be increased to any required extent. It was also then ruled, that whenever the defence force, or any part thereof, is called out for active service by reason of war or invasion, the Governor may place them under the orders of the Head of Her Majesty's regular, naval, or land forces, as the case may be, in Queensland or any other place where the force is required to serve; or under the order of any other officer in command of the naval or land forces, as the case may be, of any other of the Australian Colonies. This, I think, was a step in advance of anything that had gone before in Australia. It was also laid down in that law, that the active land forces should be subject to the Queen's Regulations and Orders in force with regard to the Army, and that every officer and man of the land forces should, whenever called out for drill, be subject to the regulations of Her Majesty's Army. It seems to me that, putting aside the federation of the forces, this was very much all that could be looked for at the time. Whether it would be possible now to direct that this almost civilian force—which, after all, very much answers to our Militia—should be liable to go to any part of the world is rather a large question, and requires a great deal of consideration. I do not think it has been ever attempted to lay down that every Militiaman—and certainly not every Volunteer—in this country shall be liable to go abroad or serve anywhere but in the country in which he is raised. But I have not the slightest doubt, owing to the high military spirit of the Australian forces, that, if war broke out, they would be all delighted to go. It must be recollected that these men are not in permanent service in the Army in the sense of getting their living by it. They are all, except a small permanent force, earning their living in various ways, and a great many of them are married men and could not afford to give up their employments and be quartered away from their Colony. It must also be recollected that the pay of these men is very much greater than the pay of the troops of Her Majesty's Army. Wages are high in Australia, and the private soldier in the Defence Force of Queensland receives six shillings a day for every day he is in camp or at drill. Those men



would, I am quite certain, willingly go on the ordinary pay of Her Majesty's troops if there was real service, but it would be rather too much to expect them to give up the ordinary wages common in the Colony to go and serve elsewhere in times of peace, probably on lower pay, and I do not think the Governments would readily pass any Act to that effect. It must be recollected that Australians hardly know what war is. They have heard of it from a distance, but certainly the great majority of them do not realise that it is quite possible they might be involved in war and be liable to attack. The people themselves, I think, are very proud of their troops. I judge so from the crowds I have always seen flocking to military parades and the pleasure they have expressed in seeing the troops, and they will go miles to visit a military camp. I think, indeed, there is a real military spirit throughout Australia, and I am sure that there never will be any lack of men coming forward to fill the ranks, even if the forces were doubled, or trebled, or quadrupled. But in Parliaments it has no doubt been the case that when there was a little financial pressure one of the first things looked to is whether they can cut down military expenses. I am not certain that that is peculiar altogether to Australia; but I think that feeling in that respect is greatly improving, and the statesmen in Australia are realising how desirable it is that such forces as they maintain should be in a proper condition of efficiency, and also be in sufficient numbers. Unfortunately, during a financial crisis a few years ago, the annual camps, which are so necessary, were discontinued. I think it is absolutely necessary if there is to be an efficient force, such as we desire to see in Australia, that camps of instruction should be held every year, and forces as large as possible should be brought together. It is necessary for the instruction of the officers, and to accustom the men to camp life and to marches, which are generally carried out in connection with these camps. It does not seem to me it would be very easy to have one commandant for the whole of the forces of Australia until Australia is federated. As soon as Australia is federated, as a matter of course there will be only one senior officer, and I trust that the Federal Parliament will take a very high view of the necessity of having trained forces for defence, and not, unless the necessity is overwhelming, stop having camps, or, as has been done occasionally, defer getting proper up-to-date equipment because there was not a superfluity of cash at the moment in the treasury. There are very few more important things than insurance against war, and after all, the whole sum that is paid by Australia towards the support of Her Majesty's squadron and for the maintenance of troops in Australia is very small, and can be well afforded by the community. I am quite certain that the military forces in Australia will improve in efficiency. They are organised very much on the lines of Her Majesty's forces here, and they are commanded by officers almost invariably selected from Her Majesty's Regular Army. I am certain they will always be in the future a most important factor in the military forces of the Empire.

Vice-Admiral P. H. COLOMB:—Of course, from my pretty well-known point of view, anything which furthers the course of mobile rather than of sedentary defence has my cordial support. I cannot help saying that the paper which has been read to us shows how very much the truth in regard to matters of defence is growing. A paper of this kind could not have been read—the thoughts would not have been in any lecturer's mind, and they would not have been understood by an audience—fifteen or twenty years ago. Of course, the English of "mobile" as against "local" defence is very clear and very easy. Not going beyond Australia, and supposing for the moment that the enemy contemplates an attack on Adelaide, before he contemplates that attack he has made up his mind, and has got accurate information of the sort of defence which will be offered there, and he will not attack the place—and never did attack the place or places like it in history—unless he went there pretty certain that he had force enough—four or five times as great as that which he has to meet in defence. Now, once he has the force and the information, there is nothing whatever to prevent him making



his attack and succeeding in it; and that is the defect of local sedentary defence. But supposing that he is perfectly accurately informed as to what he will meet in Adelaide itself, and he knows it is a small force. Supposing he knows that from Western Australia, from South Australia, from New South Wales, and from Queensland, and Tasmania—wherever it may be—the moment there is news of the probability of his going to make an attack, or of his having made an attack, the whole of these mobile forces will be thrown upon him before he has finished his job. Do you suppose for one moment he will ever undertake it? And, therefore, mobile defence, from that point of view, is certain. We know it is certain, because the appeal to our reason makes it certain, and if you examine history you will find that it always was certain, and that where it failed us was where there was not sufficient mobile force to interfere with the attack and turn the invaders, whoever they were, out; and, therefore, everything which makes the military forces of Australia mobile is adding more to the real defence of Australia, supposing it capable of being attacked, than any amount of local defence scattered here and there could possibly effect. It is a healthy and a right good sign to listen to a lecturer like Colonel Gordon laying that down pretty clearly, only, not perhaps, looking at it from the principal point of view I have done now. Then you have to recollect that in the defence of Australia, as far as the naval defence of it goes, with regard to the prevention of attacks which we have spoken of just now, the naval defence consists in its power of observing, watching closely, all the forces that would be capable of attacking Australia, because as long as observation is complete, as long as our Navy is watching every force which could possibly advance to attack Australia, it becomes perfectly certain that Australia cannot be attacked—that is absolutely clear; and that is, I hope, the theory upon which the Navy is acting now. But it is quite obvious that although you may be quite right in establishing a system of defence on the idea that you are going to have perfect observation of possible attacking enemies' forces, yet it would be mere madness to suppose that your observation is always going to be complete. In the Crimean War you know it was absolutely complete, that is to say, there never was the sign or the idea of an attack by Russia upon anything British, because the observation was complete. The French observation of the German forces was very nearly complete in 1870, but not quite. One German frigate escaped and committed depredations off the Gironde. Sir Robert Grant told us, and quite rightly told us, that it was a mistake, and Sir John Colomb had previously pointed it out in stronger terms, and everybody who has studied these matters must know that it is an absolute mistake for Australia to demand that the comparatively large squadron which she has in her waters should be kept away from their duties of observation to do perhaps nothing if the observation is complete, but at any rate to forsake the main part of naval duty. Then you see this observation may not be absolutely complete. The observing fleets may be evaded; they cannot be very much evaded, but they may be somewhat evaded, and then small attacks will be made where they pay, but only where they pay; only where success is moderately certain. The attack of all others to which Australia is liable, if she is liable to any attack at all, is the attack upon the commerce which is in the vicinity of her forts, passing in or out. That we know as an absolute fact from history, and from the most modern history, that is, the history of the Civil War in America. The attacks made by the Confederate cruisers, the few that they had, were made upon the Federal shipping, where the Federal shipping could be most easily got at, and we may be quite sure if there are any attacks upon Australia that is where it will be. Now it seems a contradiction in terms, does it not, to agree with Sir Robert Grant and say that it is perfect nonsense Australia's claiming that the squadron they pay for should be maintained in their waters, and to say at the same time that the shipping passing in and out of the ports of Australia is liable to be interfered with by the enemy? But it is not a

contradiction in terms. The ships which make such attacks are ships which of all things avoid fighting: the very last thing they dream about is engaging another man-of-war to fight her. The slightest force will prevent them making their appearance; the slightest force will drive them off, because their business is to capture shipping without fighting, and if they fight they desert the duty which they are entrusted with. It follows upon this, that you do want a certain amount of local naval force in the Australian ports, but it must be very light force and very cheap force; it is not necessary to go to any expense about it. You want small vessels, but you want not single ships of power, but three or four of little power; any kind of armed vessel is quite good enough. You want to keep the ports open only. I am not speaking without the book again here: that was our practice in every war that we have had. We always stationed weak, small ships at all the ports that our traders frequented, just in order to keep the ports open, and in order to prevent commerce-destroyers from coming and attacking our commerce, where, if there was no naval defence, it would be most easily got at. There is only one other point which struck me, that was the remark of the lecturer, towards the close of his paper, as to the necessity for an ammunition factory in Australia. Now, the evasions that I have spoken of as taking place will be chiefly the evasion by commerce-destroyers of sorts; and commerce-destroyers, if they get news (and they generally used to get news in the old days) of an ammunition-ship carrying out war-like stores necessary for Australia, would no doubt make great efforts to capture her, and they might very often succeed; and although Australia might be nominally defended, yet the means of defence—ammunition—might have been cut off from the very common failure in the main naval defence. I think if such a thing is in contemplation as the founding of a factory, say for small-arm ammunition to begin with, it will be a very wise step on the part of Australia. It is always good to have your supplies which are necessary for your defence on the spot if possible, and not to have to trust to their carriage over sea, which might be interfered with by the enemy.

Lieutenant S. D. GORDON, R.N.:—I did not come here prepared to speak on the subject, but when I saw the title of the lecture I thought I would come and hear what the lecturer had to say, because I think it is the duty of every officer, in fact of every man, to do all he can for the furtherance of that which is advocated. I would ask to be allowed to say, as I think one speaker has said before, that instead of using the words "Anglo-Australian" we should talk about the imperialisation of forces. The lecturer has said, at the end of his paper, that "a system that would provide for the *personnel* for the purposes of the Anglo-Australian squadron, and which would relieve individual Colonies of the responsibility of maintaining local men-of-war would hit the right nail on the head." That is my only excuse for speaking. I think if the system of recruiting for the *personnel* in the Navy, as well as the Army, was extended to the Colonies—and I do not mean Australia only, but Canada and everywhere else—we should overcome, in a great measure, the manning difficulty. I think we should also, as one speaker said, find that every man then would say he was not only a British soldier or a British sailor, but an Imperial one also. As regards the defences of the Colony, there is one point which has been greatly avoided. This is the torpedo defence, which was the subject of a lecture in this Institution the other day, and I think if the Colonies were allowed to train their men, and if the Imperial Government would give the use of training-ships, they could not only train sailors, but soldiers, militiamen, or whatever you like to call them, artillerymen, torpedo-men, or any other men, and Australians could defend their own harbours; because it is acknowledged that in the defending of a harbour the main weapon is the torpedo. You cannot have torpedoes without trained men to use them, and you must have training vessels to train those men in. Why not have these hulks, and why not let the Imperial Government lend them to

the Colonies and the outlying portions of the Empire to train men to defend themselves? When you come to think of it, Australia is only an island—surrounded by water; England is also an island—surrounded by water. In fact, most of our Colonies are surrounded by water, as indeed are the majority of our possessions abroad, except India, and that has water on three sides of it. The point is that each of these Colonies ought to be self-dependent and self-defensive, and yet at the same time this defence should be Imperial. All we can do for our Colonies ought to be done; and the sooner that recruiting from the Colonies is brought about, the sooner the solution of the question that the lecturer has been talking about to-day will be found. The only point I had to put before you was that I think all action in the matter should be Imperial as well as Australasian.

Vice-Admiral Sir NATHANIEL BOWDEN-SMITH, K.C.B.:—I should first of all like to take this opportunity of welcoming my friend Colonel Gordon to England. I am sorry to say, however, I cannot quite agree with all he says in this paper, and think he lays too much stress on fortresses and fixed defences. As long as we keep command of the sea it is utterly impossible for a force of any magnitude to invade Australia. The only thing she is subject to is a raid on her ports by two or three cruisers, and that is possible. The lecturer, after mentioning some places that are fortified, and very properly fortified, such as Sydney, Thursday Island, and King George's Sound, says that there are other localities where vessels might anchor which must also be protected by fortresses and land forces. I hardly think he can be serious in making this proposal, considering the size of Australia and the many anchorages on its coast. Although I would not advocate fortresses or fixed defences, I like to see those land forces, and would have the men organised so as to move quickly to any part of the coast threatened by a raid. I do not look upon these forces only as Colonial troops, believing that if the British Empire were seriously threatened many of them would volunteer in its defence either in India, Canada, or wherever their services were required. Their soldier-like appearance and good physique gained them an excellent reception in the streets of London on the occasion of the Queen's Jubilee Procession. With regard to the so-called auxiliary squadron, Sir John Colomb expressed regret that the Government had renewed the agreement with Australia in regard to that squadron. I, on the contrary, should be glad to hear that the agreement is renewed. It is the fashion of some politicians in England to belittle the amount the Australian Government subscribe towards the maintenance of that squadron. If we compare the amount they give with our enormous naval estimates, it is certainly small; but we must not look only at the amount; we should consider the spirit which prompts them to offer that amount. At all events they are the first of the self-governing Colonies which have offered to contribute at all towards the protection of commerce in their own waters. The principal objection, I understand, Sir John has to the agreement is the clause which limits the operation of that squadron to Australian waters. There is a clause to that effect in the present agreement, but I feel certain that in a case of emergency it would be treated in a liberal spirit by the premiers of the Colonies. I would express a hope, however, that, if the agreement has been renewed, that clause has been amended. I have not yet seen the new agreement. Perhaps the Chairman can tell us what it is. But how does the matter stand? We have those additional ships, and they are entirely under the command of the admiral of the station. Does anyone suppose that if a war broke out, and the admiral in command of the Australian squadron thought it necessary to take those ships to China, say, he would not do it? There is one way the Australians could assist us in the Navy, and that is by endeavouring to raise a reserve of seamen to man our ships in times of emergency. In some of the ports of Australia there are a good many seafaring men, and these men are drilled and formed into naval brigades. I wish to speak of the officers who have trained and drilled them with

every respect, because they have done their work well ; but it appears to me they have not quite understood or recognised for what purpose these men are being trained. If they could be enrolled to serve on board our ships in time of war, and would agree to go out for training every year, or every alternate year, in our cruisers—say ten or a dozen together—they would form a valuable reserve for the Navy in Australian waters. Our only reserve at present are the few pensioners who are living in the country.

The CHAIRMAN (Sir J. Bevan Edwards) :—I think the time has now come when this discussion must end. I congratulate Colonel Gordon on his paper, and also upon the distinguished company which he has brought together. We have had some admirable speeches from well-known officers and gentlemen here to-day, and with the sentiments expressed I have been almost entirely in accord, especially with those of Sir John Colomb. Admiral Bowden-Smith asked for information as to the details of the Australian agreement. I am sorry to say I am not in a position to give them. I should have thought it was much more likely he would know them than I should. He has mentioned one subject which I think is of very first importance, and that is, that throughout the ports of Australia—and I have myself seen them and inspected them—there are a very large number of naval men classified as naval reserves, to whom at present no particular duties are assigned. I trust before long we shall find these men enrolled and trained to be a stand-by for the British Navy in time of urgent necessity. I had intended to make certain remarks to you, but the reading of the paper and the discussion have taken some considerable time, so I must limit them to only a few words. I wish to point out to this meeting, as I endeavoured to point out in Australia nine years ago, that there is only one means of defence, and that is the power to take the offensive. Any system which creates defence forces purely for the defence of their own harbours and towns instead of to defend great national and Imperial interests will be a system which falls far short of what is required by the Empire. The defence of Australia primarily rests with the British fleet, and it will be carried out in the British Channel, or off Brest, or in the Mediterranean, and not on the shores of the Australian Continent. It is very clear what will be the duty of Australian troops after we have assured our mastery of the sea: their duty will be to fit out from the ports of Australia mobile forces to act with our fleets in the attack and destruction of the enemies' bases from which the Australian Continent may be threatened. The lecturer has said "no fleet can exist without a base of operation to which it can look for those measures that are necessary, and without which a fleet would be absolutely useless." If that is true as regards the action of our own fleet it is equally true as regards the action of the fleet of our enemy, and, as I have said before, the first necessity for the defences of Australia is that she should possess small but mobile forces with which to back up the action of our squadrons in the Pacific and Indian Oceans in attacking and destroying those naval bases from which the enemy's fleets may come to threaten Australia. I think that admits of no discussion. I was sorry to see in this Section 19 of the Act of South Australia that officers and soldiers shall be liable to serve in any part of Australia or Tasmania, but not elsewhere. I regret those words "not elsewhere." No effective defence of Australia can be made until the forces which may be established for its defence are liable to service for the defence of the national interests in any part of the world. I do not say that in times of peace they should be liable to serve, as our Regular Army, in India or elsewhere, but in times of great national emergency. From what I saw in Australia, I have no doubt whatever the Australian Colonies would be the first to come forward and wish to aid in the general defence of the Empire. I do not know whether anybody has ever thought what forces Australia would have to maintain if she bore the same

burden that Great Britain does in the defence of the Empire. She would have to spend something like two millions a year on the Navy to place her on an equality with the expense to which this country goes. In addition to that she would have to keep some fifteen or sixteen regiments of Regular infantry, besides Militia and Volunteers, and she would have to back them up with a sufficient force of cavalry and artillery. At the present time, as Sir Henry Norman has said, the money devoted to the defence of Australia, looking at it from an Imperial point of view, is a mere bagatelle to what would have to be spent if the Australian Colonies took their share with the mother country. I would only say in conclusion that I trust the great work of federation, in which I have been permitted in a small way to aid, will be soon carried into effect, because with it will come that federal army so much required for the defence of our common interests in the southern hemisphere. All I can say is that, when that federal army is established, I trust it will be established with the view to national defence, and not to purely Australasian defence. You cannot separate the two. It is absolutely necessary for the defence of Australia as well as for the defence of the Empire that she should take her full share in carrying out that defence. On your behalf I am sure you will wish me to thank Colonel Gordon for his most excellent lecture. I must say a very interesting discussion has followed, which I trust will bear fruit in due course.



## THE FORTIFICATION OF OUR DOCKYARDS, ETC.

*By Major-General Sir E. F. DU CANE, K.C.B., late R.E.*

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THE recent death of Sir William Jervois has led to my noting down from recollection and otherwise, for a memoir in the *R.E. Journal*, the circumstances which led half a century ago to the origination and construction of the great fortification works with which he was so much connected, and with which I was associated by working under him. The works and the principles which they embody have of recent years been subject to much criticism, principally founded, as it seems to me, on an entire misconception, and consequent misrepresentation, of those principles; and the writers appeal to a generation who probably do not know, even if they do themselves, how it came about that this great effort was made, or what authorities they were who supported it and brought it to fruition.

It will therefore, I think, serve a useful purpose to recall these events, so that the critics whose motto is "whatever is is wrong," and are bound to see facts and causes to accord with that doctrine, may not have it all their own way.

The condition of our military establishments fifty years ago can probably hardly be realised by those who have only come to observe these things in more recent years.

After the great wars of the French Revolution ended in 1815, all our military establishments were reduced wholesale, all the accessory departments which are necessary to enable the fighting elements to carry on warfare were wiped out, regiments were disbanded, officers placed on half-pay (I remember an officer who had served for one or two years before 1815 drawing half-pay continuously for upwards of forty years after), the Militia were never embodied, there were of course no Volunteers, the stores were used up and not replaced, Dover Citadel was occupied by a flock of sheep. At the time I joined the Service, fifty years ago, all the artillery we had ready to take the field consisted of about two or three mounted field batteries and about five troops of horse artillery—all the rest of this force was organised for service in garrison only. The engineers had been saved from further extinction by taking up the barrack work and making themselves generally useful. Promotion was so slow, except when helped by purchase, that the old R.E. officer, who was professor of surveying at Woolwich, was still a captain, though he had got his commission thirty-two years before.

The infantry were mostly dispersed in the Colonies, where they were out of sight, those who were in the United Kingdom being—except those

in garrison towns such as Portsmouth, Devonport, and Chatham—for the most part scattered about in small barracks. The Army Estimates, 1816, provided, exclusive of the troops in India and the Army of Occupation in France, for only 25,000 troops in Great Britain, the same in Ireland, 50,000 in the Colonies, and 3,000 reserve for Colonial reliefs. Such a measure as the assembling of a force of all arms to manœuvre over a tract of country was unknown. This condition of things continued for more than thirty years. The Duke of Wellington, when in after years Commander-in-Chief, was fully alive to the danger of this state of things; and said he had in vain endeavoured to awaken attention of different administrations to it. On another occasion he said, in the House of Lords:—"You have never had more than enough men to relieve your sentries. . . . Such is the state of your peace establishment now and for the past ten years."

It so happened that in 1846 Sir John Burgoyne became Inspector-General of Fortifications. Sir John Burgoyne was eminent not merely as a military engineer; he had fought through all the Peninsular War, had taken part in several other military expeditions or invasions, had been ready to give his services outside his own special branch in any way in which he could be useful, and was highly considered as a military authority by the Duke of Wellington and other distinguished generals. Nor was he eminent merely as a soldier, for he had been selected by the Government for certain civil duties requiring peculiar qualifications.

In his new position his attention was specially directed to our military condition, and he perceived that while our strength was reduced as above described, the facilities for an invasion had been much increased by the introduction of steam into the Navy. Prince Joinville had, in fact, not long before published a pamphlet on the subject from the French point of view. He therefore submitted a paper on the subject to Sir George Murray, the Master-General of the Ordnance, the former Quartermaster-General of the Peninsular War. This paper came before the Government, and attracted the particular attention of Lord Palmerston, who was especially alive to the considerations involved on account of his position and experience as Foreign Secretary. There was, in fact, at this moment a very strong feeling in all the European monarchies against England as a sympathiser with those who were struggling for liberty, and dangerous combinations were going on against us. Lord Palmerston was the more able to appreciate questions of this order because from 1808, the opening of the Peninsular War, he had filled the office of Secretary at War.

He therefore, with the aid of Sir John Burgoyne, drew up a report, which was laid before the Cabinet. He pointed out that France, though really inferior as a naval Power, might, by her better organised system of naval preparation, or by means of manœuvres, make herself superior in the Channel for a short time, and, having an immensely superior Army, might land such a number of men as would enable her, besides other hostile measures, to destroy our dockyards, and thus paralyse our naval resources for years.

Lord Palmerston proposed the embodiment of the Militia and other measures, and, further, the expenditure of 6 millions (to be raised by loan) in fortifying our dockyards on the sea and land sides, and in providing great harbours and stations for our fleets, and removing our great store of warlike material from a position so assailable as Woolwich.

I must pause here to point out how entirely without foundation is the assertion which has recently been made that in all the measures which ultimately grew out of these proposals the fleet was ignored or minimised, or that the land defences were proposed as a substitute or alternative for a superior fleet. It is difficult to decide which is the more improbable—that the eminent authorities I have referred to should have suggested such a doctrine or that the naval advisers of the Government should have acquiesced in it.

The plain fact is that the fleet and its necessities were seen to long before anything was even proposed for the land forces and defences. Under the name of Harbours of Refuge, great stations for our fleet had been projected years before, and in part set on foot—for instance, at Portland and Alderney.

The great harbour at Dover was proposed in 1844 and begun—though it is only now going to be carried out in full—exactly on the lines recommended by the Royal Commission of that date, with the strong support of the Duke of Wellington. In these matters also Lord Palmerston had taken a leading part.

The large extensions of the dockyards of Portsmouth, Chatham, and Devonport accompanied the construction of the extended line of works intended for their protection. So far as my recollection goes, there never was at that period, on the part of those acquainted with the condition of the Navy, any assertion of such inferiority of our naval power as in any degree corresponded to that which our Army had sunk to, and, in fact, as I have pointed out, Lord Palmerston's memoir actually asserted our naval superiority as a fact.

It was shortly after this, viz., in 1848, that the celebrated letter of the Duke of Wellington to Sir John Burgoyne became public, by the indiscretion of Lady Shelley, to whom it had been shown, and aroused the nation to the danger of the condition we were in, though I remember some people were still sceptical. It possibly might not have had so great an effect the year before, but in 1848 occurred a French Revolution of which nobody knew to what it might not be the prelude.

In this letter the Duke clearly set forth his own view of the possibility of invasion, saying, "We have no defence or hope or chance of defence excepting in our fleet." He set out the measures he considered should be adopted—an increase of the Army, the embodiment of the Militia, replenishing our stores, etc.; and in detailing the possibilities of invasion he said:—"I know no mode of resistance, much less of protection from the danger, excepting by an Army in the field capable of meeting and contending with its formidable enemy, aided by all the means of fortification which experience in war and science may suggest."

The result of the steps taken in consequence of these movements is very instructive. It is quite a commonplace feature, in the declamations which are poured forth whenever defects in our naval or military establishments or organisation become so evident that the public is aroused to them, to complacently throw off the responsibility of such defects on to the shoulders of the officials concerned by saying that the nation will always give money freely if only it is asked for by the responsible authorities. The case here referred to gives an opportunity of testing this doctrine. Lord Palmerston's proposals were adopted by the Government of which Lord Russell was the head, and increased Army Estimates brought in. But they were opposed by Cobden and Bright and the Manchester economists—the dangers were derided as “moonshine.” The Duke of Wellington was sneered at on account of his age, and reproved for stirring up animosity between neighbouring peoples.

The Army was by this school always discredited, as being merely “poor relief for the aristocracy.” The proposals for increasing it or using it were attributed to mean motives of personal advancement, and in the result, instead of an increase to the Army Estimates, they were reduced. A very similar line has been lately taken up by a Radical candidate for Parliament with reference to the present movement for increasing our military force, and it is an incontestable fact that until a boom of some kind has been started, so as to create an overwhelming body of public opinion, Ministers are so certain to be beaten in any proposals they may make for an increase of expenditure in either Army or Navy that they shrink from making the attempt.

The matter went to sleep again for four years; commerce was to make all mankind peaceful and forbearing (quite forgetting that it had been at the bottom of most of our wars), and the reign of universal brotherhood was supposed to be inaugurated with the Exhibition of 1851.

In 1852 occurred in France the *coup d'état* by which Louis Napoleon became Emperor of the French.

It was obvious that a man whose popularity was founded on his being the successor of the Great Emperor, the central idea of whose whole life was to humble and ruin England, and whose final catastrophe was met in a battle with the English, was very likely to nourish that popularity by endeavouring to avenge his defeat, which indeed he had put forward as part of his mission in order to conciliate his judges when years before he was tried for one of his attempts to overthrow the French Government.

The Government of Lord John Russell therefore announced the determination of Ministers “to improve the defences of the country, so as to render invasion impossible.” The fortification on the land and sea-side of some of our great naval stations was proceeded with, but piecemeal and very slowly, as the provision for such works could be made only on a small scale in the annual Army Estimates.

It was at this period that forts were erected in the Island of Alderney to guard the harbour, which had been begun some years before as an outpost from which our fleet could watch the great military harbour at

Cherbourg. The harbour was, as it turned out, badly designed, and before very long became useless, and the harbour as well as the forts have now been abandoned. The Militia was then again embodied, and a first attempt at "autumn manœuvres" was made by assembling a body of troops of all arms and encamping them at Chobham.

Then followed the war in the Crimea, which showed up all the weakness of our military organisation, and which, astonishing as it may seem in view of what has gone before, the easily misled public laid at the door of the profession and of its heads instead of seeing that the whole of the blame lay with themselves for accepting the leading of ignorant theorists who derided the warnings and opposed the proposals of the most experienced statesmen and warriors. So entirely was the soldier element discredited that I remember being told, when in the recently formed War Office in 1856, that the talk among the civilian element was how they would soon put the organisation and administration right "if once they could get rid of the cocked-hat gentry."

In 1856 Lord Palmerston was Prime Minister. As has already been stated, he was strongly impressed with the necessity for strengthening our offensive and defensive forces and fortifying our dockyards. Not limiting his interest to merely sanctioning the adoption of this policy, he kept himself informed on the most important details of the works proposed, and personally pushed on the various measures which were undertaken.

Prince Albert, too, was extremely interested in these matters, being well aware of their importance. He was the principal promoter of the camp at Chobham and of the subsequent establishment of a permanent camp at Aldershot, where our troops might be taught more than they could possibly learn in the restricted spaces formerly at their disposal.

In 1858 the Government had private information that the French were secretly making preparations for war. The attempt at the assassination of the Emperor by Orsini, which was planned in this country, led to the most violent feelings on the part of the French; some colonels in their Army sent addresses to the Emperor containing the most insolent language towards this country, accompanied by threats and demands to be led against "this den of assassins." These addresses were made of special significance by being published in the *Moniteur*; the French ambassador was instructed to call attention to the dangerous spirit which was being exhibited, which might draw the Emperor, contrary to his own desire, into hostile measures. I remember, by the way, hearing at this time, on excellent authority, that when something to this effect was said in conversation by the French ambassador to Lord Malmesbury, who was our Foreign Secretary, the reply he received was merely "Oh! you be d——d!"

The Government, however, of course thought it necessary to consider the best means of preparing against an invasion, and assembled a Secret Committee to report on the subject. It was estimated by this Committee that if the enemy obtained, even for a short time, a naval superiority in the Channel, we ought to have 100,000 effective troops



ready to meet him in the field, besides 34,600 minimum garrisons for special places in England and the Channel Islands.

What we actually had available immediately was only 37,000 Regular troops. We might collect 87,769 Militia, enrolled pensioners, Yeomanry, etc., and from this force we should have, besides defending the country, to provide the necessary augmentation of foreign garrisons.

The Volunteer movement was started at this time to help in supplying the deficiency in men, and the importance of strengthening our means of resistance "by all the means of fortification which experience in war and science might suggest," as recommended by the Duke of Wellington, became manifest.

In 1859 Lord Palmerston again came into office as Prime Minister. His feelings as to the danger of our situation may be seen by the following extract from a letter which he wrote in 1861 to Mr. Gladstone, who seems to have been quite incapable of understanding military affairs, and publicly advocated increased economy, while relying for our immunity from attack on the commercial interests of other nations in preserving peace with us:—

"Commercial interest snaps under pressure of national passions. . . . At the head of this neighbouring nation, who would like nothing better than a retaliating blow upon England, we see an able, wary, counsel-keeping, but ever-planning sovereign; and we see this sovereign organising an Army which, including the Reserve, is more than six times greater in amount than the whole of our Regular force in the two islands, and at the same time labouring to complete a Navy equal, if not superior, to ours. Give him a cause of quarrel, which any foreign Power can at any time invent or create if so minded; give him the command of the Channel, which permanent or accidental naval superiority might afford him, and then calculate if you can—for it would pass my reckoning power to do so—the disastrous consequences to the British nation which the landing of an army of 100,000 to 200,000 men could bring with it."

The designs of the fortifications which were being erected became the subject of lively discussion in the Press, and for this reason, as well as because it was desirable that the matter should be put before Parliament and the country in its entirety and with unquestionable authority, a Royal Commission was appointed to consider what fortifications were necessary to provide for the complete protection of the dockyards and arsenals.

The most outrageous assertions have been made as to the views expressed by the Commission. By selecting passages from their report it has been attempted to show that the fortifications they recommended were intended as a substitute for the superior fleet, which is, of course, a vital necessity for us.

With a full recollection of the ideas which were held at that time among those who were concerned in these matters, I can say that any such view was absolutely contrary to what they held. Our supremacy at sea was always treated as a condition which nobody dreamt of dispensing

with, though it was seen to be unquestionably possible that it might be locally and temporarily suspended or interrupted.

The Royal Commission consisted of seven members, of whom two were naval men of considerable repute and one a civilian. The Government had access, as usual, to the opinions of its official naval advisers, and it is to brand all of them with incredible wrong-headedness to suppose that they assumed the collapse of our naval power as a contingency to be calmly accepted, and that any fortification on land could possibly prevent the catastrophe which must follow such a disaster.

Their report was presented to Parliament in 1860. Matters were still in a very strained condition between us and France. The Emperor and his emissaries professed that they desired to restrain the feelings which prevailed in France against this country. Count Flahault, discussing the question with Palmerston, said that his great object was to prevent war, and that what he feared was an invasion by France, for which steam afforded such facilities. The certainty that ideas such as these were floating in the minds of our neighbours, or that they should venture to use such a mode of exercising pressure, was not likely to lead to our efforts being relaxed.

The Commission recommended an expenditure of between eleven and twelve millions. Government proposed to limit the expenditure to about seven and a half millions, which included the cost of certain works already in hand.

Considerable opposition was offered to the proposals, and all the arguments which have of late years appeared in the form of criticism were, of course, brought forward and disposed of. Eminent persons, who did not take the trouble to study the actual proposals, argued as if the works were intended merely to prevent a landing, and sagely said the enemy "would of course land a little to the right of them, or a little to the left of them."

Mr. Cobden did not shrink from exhibiting his ignorance of military matters by saying derisively:—"Why, the labourers on the farms in Sussex could throw up in a week fortifications enough to stop a French army." Others used an argument I have lately seen repeated by a writer in the *Times*, that fortifications were to be avoided because they lock up troops.

This argument always seems to me to assume a quite incredible amount of wrong-headedness on the part of those who are responsible for constructing such works and those who dispose of the troops. Fortifications cannot be built merely to satisfy the whim of some zealous engineer. The highest military and civil authorities of the Army and War Office must approve of any proposals before they can be carried out. Forts are, of course, put only where there is something which *must* be defended, and their object is to enable that defence to be carried out with troops inferior in number or quality to those which can be brought against them. If there is no probability of an attack on such a place the troops can be withdrawn just as well as if there were no fortifications, and, in

point of fact, fortifications do not lock up troops, but rather set troops free.

More specious was the argument, often repeated now, that our naval superiority was a necessity for us, on account of our commerce and our food supply, and that that would protect us from invasion, so that no land defences could be necessary.

It was shown, however, that if our naval bases had nothing to guard them but the fleet itself, the fleet would be unduly fettered in its operations, and that a naval reverse or local and temporary inferiority might lead to the total and irrecoverable destruction of the bases on which our Navy itself must depend. In an article published in the *Nineteenth Century Magazine*, in January of this year, I have discussed fully the question whether our Navy could be considered alone a complete guarantee against invasion, and need, therefore, say no more on this head. It was during this period that Lord Palmerston wrote the letter, already quoted, to Mr. Gladstone, who opposed strongly the necessary expenditure. All the objections were, after ample discussion, considered to be disposed of, and the Government were prepared to proceed to carry out most of the recommendations of the Commission in the usual way, by annual votes. On this, Mr. Horsman carried a motion that the expenditure should be met by a loan and not by annual votes, in order to ensure the works being carried out with rapidity.

A special committee was appointed to examine all designs of works to be carried out, consisting of naval and military members and a civil engineer, and they also had to pass the permanent Defence Committee.

I think now that it must be clear, and cannot be gainsaid, that the great works of fortification which date from this period were erected at the instigation and under the auspices of our greatest masters in the art of war, and were promoted by statesmen of all parties fully competent to understand the subject, that they were subjected to ample criticism, professional and unprofessional, and it is open to anybody to compare the qualifications of the authorities who are thus responsible for them with those of their recent critics and opponents.

I may add a few words as to the technical details of the works as actually executed.

It so happened, unfortunately, that at the particular period when this movement had arrived at the stage above described, science having for some little time been directed to the improvement of warlike weapons, the most vital changes began to be made in matters which fundamentally affect the design of defensive works. The power, range, and accuracy of artillery began to be enormously increased; 3,000 yards used to be considered the limit outside which bombardment was not practicable; we began to hear of artillery having a range of 9,000 yards. Armour-plating was then being discussed, and very soon began the long warfare between the active force of guns and the passive power of armour. Torpedoes and submarine mines were very soon to appear. High explosives for shells and mines were still in the distant future. The Secession War in America brought some of these questions to the front,

and in 1862 led to some naval members being added to the Royal Commission to consider how the original recommendations as to forts at Spithead to oppose ships were affected. The Fortification Committee had already determined that iron should be substituted for stone in those works, and the enlarged committee could suggest no further modification.

It is worthy of note that it appears from their report that at this time the old 68-pounder and the rifled 110-pounder were the heaviest guns known. Sir W. Armstrong had a 12-ton gun intended to carry when rifled a 300-lb. shot, and was designing another to carry 600-lbs. The "Warrior," the new ironclad with  $4\frac{1}{2}$  inches of armour, was the strongest ironclad afloat, and no gun then existing could pierce its sides. When I have seen lamentations by those who hold that the money spent on fortifications would have been better applied in increasing the Navy I cannot help asking whether they have considered what value the expenditure would now have if it had been laid out in additional "Warriors."

It was in the same year, 1862, and also in consequence of the use made of torpedoes and submarine mines in the war in America, that the matter was taken up in this country, since which it has been very much developed.

The defence of our commercial harbours and of our naval stations and coaling ports abroad was carried on simultaneously with the works set on foot at home. The proposals for creating a central arsenal in a less accessible place than Woolwich have gone no further.

The works during and after execution did not, of course, escape criticism and attack in the Press and in Parliament, and special independent committees were appointed to enquire into these criticisms from time to time, to report for the information of Parliament. In particular, one comprising highly competent members was appointed, in 1868, by Sir John Pakington, to examine into all the works of fortification which had been built under the loan, and to report whether they had been well and skilfully constructed, whether the foundations were secure, and whether the estimates would suffice. This committee visited and examined every work, and had access to all plans and accounts of expenditure. Their report testified their entire approval both of their design and execution, saying that great skill had been shown in adapting the original designs to altered circumstances and the great advance in the power of rifled artillery. This opinion accords with that expressed by many eminent foreign officers who have been allowed to visit these works. The development of high explosives for shells has undoubtedly introduced a new element into the attack of works, and modifications will of course be necessary in our works, as well as in those erected in other countries, to meet the new conditions.

There is, I am aware, a new school which tells us that permanent works in prepared artillery positions—with deep ditches, escarps, and counterscarps, and flank defences of ditches—are no longer of any use; that all the money spent in these elements has been thrown away, and that what is to be aimed at is concealment of your positions, while cheap

obstacles, such as steel railings and barbed wire entanglements, covered by direct fire, will suffice to prevent an assault.

There is of course for some minds a fascination in cheapness, and such doctrines are no doubt very acceptable to those who have to provide the money for defensive works, but there is much truth in the observation made to me by an eminent foreign authority on this subject:—  
“*Les fortifications à bon marché sont aussi peu recommandables que les culottes à bon marché—on y fait trop facilement des trous.*”

Barbed-wire entanglements and steel railings are no doubt effective obstacles against a sudden rush, and, like many other older devices of which they are the modern examples, they would form excellent additions to permanent works, but to make them the sole obstacles seems to me too much like treating a fort as if it was a suburban villa to be protected against burglars, and dispensing with flanking defences to be going back into the ideas of the dark ages.

I therefore believe that the country is to be congratulated on the possession of the works erected in pursuance of the recommendations of the Royal Commission of 1859-60, and I have no doubt that any foreign nations which are likely to contemplate an attack on us will form a truer estimate of the difficulties they present than the critics who find a pleasure in depreciating them.



## SOUVENIRS MILITAIRES:

GÉNÉRAL MONTAUDON.<sup>1</sup>

MEMOIRS exist in order that history may be learned, and it is only by the connotation of many memoirs that we arrive at an approximation to truth. Memoirs, from the hypothesis, are written from one standpoint, and any single writer's power of view is of limited, but varying, range: if he is a civilian, with breathing space and culture, the boundaries are comparatively enlarged; if, on the other hand, his profession is largely physical, as the sailor's or the soldier's on service, his appreciating power is concentrated and contracted. Hence it arises that military memoirs are of great value when they relate circumstances in the direct purview of the writer, and fail in value as their scope extends towards supposed inferences. It has happened that before the "Souvenirs Militaires" of General Montaudon were published other distinguished officers have widely circulated their reminiscences, and have done involuntary injustice to men no longer able to defend themselves: a general officer in command has ample means of learning and weighing matters of great importance, but the subordinate positions he must necessarily have filled in earlier years gave no such extended opportunity; and we have in our literature books where the assurance of less maturity is printed under the ægis of a developed reputation.

In the preface, written at Amiens in 1885, after his retirement from the active list, the General promises "*un aperçu sincère et véridique des faits d'armes qui se sont passés sous mes yeux.*"

Born in 1818, he entered St. Cyr in 1836, and, after two years, was appointed sous-lieutenant in the 26th Regiment of the Line, then in Constantine. From his home near Limoges he was ten days before reaching Toulon, and, after a delayed embarkation, seven days more were spent in a steamer before reaching the African coast. A short rest at Algiers and he shipped again for Bône, there joined the dépôt, and passed on with a convoy by four days' marching to the headquarters of his regiment in the southern mountains. He served two years with the regiment constantly on the move, and for transport during that time one baggage pony was allowed for the three company officers. His comrades must have been efficient, for the state of the regiment was good, whilst others broke down under the strain.

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<sup>1</sup> Tome I. Paris: Ch. Delagrave, 1898.

In 1841 Montaudon was promoted to lieutenant in the 75th at Besançon, and after a year's garrison duty he was transferred to the 1st Zouaves in Algeria; his captain sick, and having no sous-lieutenant, for eighteen months he was single-handed as company officer.

When General Bugeaud took command of the troops in Algeria, Abd-el-Kader was raising the whole country: from his base near the frontier of Morocco he personally and vicariously preached a religious war throughout Algeria, from Morocco to Tunis, and from the Mediterranean coast inland to the great desert. Bugeaud organised light columns of picked troops in each of the three provinces (Constantine, Algiers, and Oran) and repaid raid with raid. Conscripts had been tested and failed; eventually, but at heavy cost, seasoned and selected troops accomplished the difficult task of beating down, in mountain and guerilla warfare, tribes as courageous as the Afridis of the present day. The baggage of the flying columns was reduced to infinity, one mule was allowed for the five officers of a half battalion, and the turbans of the Zouaves formed the originals of the shelter-tents afterwards introduced. The men actually carried one day's bread and six days' biscuit, as well as groceries, and each company had a donkey to transport mill-stones for grinding the wheat found in the Arabs' store-pits. There is no doubt but that the convoys drove cattle for consumption with the other stores.

In April, 1842, Montaudon served in the flying column commanded by Changarnier: the objective was the beleagured and starving garrison of Cherchel, but a month was spent in fighting from Blidah to the coast; and, the relief effected, Changarnier turned southwards to the mountains, harrying the insurgent villages and destroying stores and crops of grain. The mountains in places were inaccessible to loaded animals, and transport was frequently parked, whilst the battalions moved sometimes for two, sometimes for three, consecutive days with only the stores carried by the men; the tribes suffered small loss of life, but were thoroughly scared, and eventually tendered their submission. Isolated men and small parties of French or of friendly natives were frequently cut off, and their bodies when found were invariably mutilated; both the foreign legion, called the Zephyrs, and the Zouaves became so enraged that all inhabitants—men, women, and children—of the hostile villages were ruthlessly bayoneted; their dwellings, crops, and fruit-trees were destroyed; but intimate knowledge of the passes in their own localities generally enabled the Arabs to save their herds and flocks.

The French rear guards in retreat, as happens to this day in mountain warfare, were persistently harassed, even when the retreat was conducted by alternate echelons. The attack was generally made in three columns, right, left, and centre in support, the latter covering the convoy.

During a raid made in June, 1842, through the country between Milianah and Cherchel, the columns came across Jews and Moors who had been driven out by the Arabs for sympathising with the French, but their misfortunes were no safeguard; officers and men pillaged them without mercy. On the 5th June the 7th Chasseurs sallied from Milianah

in aid of Changarnier's columns, but they were surprised on the march, lost 8 officers and 120 men, and fled disconsolately back to their fort; the temporary success raised the country, but the columns the next day beat off the Arabs, and following them up seized their flocks; in a few hours the chiefs tendered their submission, and the columns returned to Blidah. In the hot-weather march of late June into the mountains south of Milianah, "veritable dog days," as Montaudon calls them, sunstroke broke down some men; but as few were less than twenty-three years of age, and the bulk between twenty-four and thirty-five, the loss was trifling.

Early in July the cavalry, supported by Zouaves, charged a large retreating body, and captured 2,500 prisoners of both sexes and of all ages, 45,000 sheep and goats, 1,800 loaded camels, and 2,000 beasts of sorts; the friendly Arabs from near Blidah drove them home under convoy of the French, but half of the whole were lost from accident or starvation. For his conduct in this flying column Montaudon was recommended for promotion.

A couple of months were spent in road-making from Blidah south to Medeah, and early in September another flying column under Changarnier was formed to protect the submitted tribes from the raiding mountaineers. On the 11th the cavalry were thrown forward from Milianah into the mountains; they were supported by three companies of Zouaves mounted on mules, and cut up the Brazze tribe, capturing eighty bullocks and some hundreds of sheep, after a fight which cost the French but few casualties. The 19th and 20th were two days of hard fighting; the flanking companies had serious work to prevent close attack on the main body and the convoy. During those two days and during the crossing of the mountains to gain the southern plains, Montaudon's battalion of Zouaves lost 100 killed and wounded out of a strength of 450. Leaving the wounded and stores in charge of two companies, Changarnier throughout the night pushed forward the rest of his three battalions and rushed the Arab camp, making another capture of 2,000 cattle and some prisoners. On the 2nd October Changarnier was back at Blidah to revictual, and again made a fortnight's raid till the 25th.

Bugeaud in command of three columns started early in November in a south-westerly direction towards the mountainous district bordering Oran, in which Abd-el-Kader held his headquarters; the country lately traversed by Changarnier was for the most part in sullen quietude, but here and there an Arab chief burned powder before surrender, and paid dearly in cattle and in pillage for his superstitious code of honour. The success was complete, and by the 18th December the chiefs had submitted. Bugeaud returned to Algiers and the Duc d'Aumale succeeded him in command. Montaudon was detached under Changarnier and marched through a difficult mountainous country to the sea coast at Tenez, and back to Blidah by the 2nd day of 1843. He had worked as company officer for nine months, campaigning in mountainous countries, and formed a just opinion of the amount of work a conscientious officer can get out of men in a well-conditioned regiment, and he recurs

to the age of the men who had stood by him so well ; he opines that with men from twenty-three to thirty-five work can be done that would be hopelessly impossible with boys and recruits.

In January, 1843, another three weeks' campaign became necessary owing to the disturbed state of the lately yielding tribes in the Milianah mountains, now deep in snow, and again in February the Duc d'Aumale commanded another raid, but snow and want of provisions forced a retreat with the task incomplete.

In May a new base camp was formed at Orléansville, half-way between Algiers and Oran and thirty miles inland from Tenez ; Abd-el-Kader had formed an important concentration in the south. Mules sufficient to mount one-third of some Zouave companies were taken, and thus a formidable support was available for the irregular cavalry. Two-thirds of the men marched, one-third rode, and the distances covered were very great. It was noticed that the Arabs, supposed to be friendly, lit fires, but the men were shot off-hand and the signals extinguished.

Abd-el-Kader and his enormous travelling camp were ahead, and the scent was hot ; animals—four-footed and others—who had broken down, were constantly being passed, and on the 16th the valley of Oued Tagin was rushed, and there 40,000 Arabs in 3,000 tents had collected. The mounted infantry supported the cavalry, and the fighting men of the tribes, hampered by their families, retreated in disorder, after considerable loss.

The booty was immense in prisoners, treasure, stores, and beasts, and the plundering was savagely promiscuous for twenty-four hours. The last march on to the camp was seventy-five miles, and was covered by the main column in thirty-six hours.

On the return of the troops to Médéah, after this capture and destruction of Abd-el-Kader's "Smalah," the Duke took leave of the regiments and returned to France.

Abd-el-Kader took refuge on the boundaries of Morocco, whence he constantly inspired the true believers to harry the yielded tribes, and in their defence marching columns from the French bases were constantly on the move throughout the summer and autumn of 1843 under the general—frequently the personal—supervision of General Bugeaud. The four winter months were employed in improving the roads between Blidah, Melianah, and Cherchel, but early in 1844 the Kabyles, east and south of the town of Algiers, began to show signs of hostility. They are a mixed Berber race, and not Arabs. In the march on Delhis, forty miles east of Algiers, the Isser had to be traversed when in flood ; above and below the fords ranks of cavalry were placed, and the infantry crossed, wading up to their shoulders, and Delhis was occupied after various skirmishes.

In May Bugeaud gained the high ground of the Djurdjura range, but before all the tribes had surrendered he hastily retired, as Abd-el-Kader, aided by the Moors, was in arms on the Morocco frontier—a rising that

led to the battle of Isly. Montaudon's Zouaves took no part in that campaign. The half-done work was futile, and it was not till 1857 the mountain Berbers of Djurdjura eventually submitted.

In 1845 Abd-el-Kader was again to the fore, and columns flew east, south, and west. Horace Vernet was attached to the headquarter staff, and won the hearts of the Zouaves by making, under fire, those studies of men in action that gave the realistic details to his great pictures. In July Montaudon was deservedly promoted, just previously to a tremendous fanatical outbreak through the length and breadth of the three provinces. French detachments were cut up in all directions; one whole battalion was destroyed to a man, after expending all their ammunition; an isolated company on convoy surrendered. Bugeaud organised his sempiternal columns and struck fanwise in every quarter; submitted tribes prepared for wholesale migration across the mountains to the south; but the Marshal, learning from his spies the prepared movement, struck the assemblage whilst on the march, and on the 2nd December captured enormous booty. The terrible, but not unwonted, outrages of successful French troops were in full swing, when heavy snow began to fall, and the march of barefooted women and children under French convoy to Tiaret, might have given Horace Vernet a new theme for his facile brush. From Tiaret, Bugeaud struck south-west to Freunda, where he learned that the Emir had marched away east to Gondjilak, and was threatening the mountain country south of Algiers. The flying column marched night and day in pursuit, till want of food caused so much discontent that the pursuit relaxed, and the Arabs gained confidence. Abd-el-Kader bivouacked but six miles from the French main column—he on the high ground of the Beni-Ouragh, they on the inundated plains below. Each night sentries of the less good French regiments were assassinated, and horses and mules by tens were stolen from the camp squares by naked night-thieves. At Christmas the weather improved, and the columns again advanced; but Abd-el-Kader, constantly opposing the advanced cavalry, retreated in order before the infantry could support; the French gained ground and the tribes submitted, but the Emir and his regulars moved off to raise guerilla warfare in the southern districts. The column again turned against the Flittas country, south of Dellis. The refuge caves of the insurgents were strongholds that could be reduced but by one process—brushwood was piled in the valleys, and men, women, and children were relentlessly smoked to death.

With replenished stores from the dépôt at Ammi-Moussa the columns again took the field in the end of January, 1846, and sustained skirmishing lasted night and day from the 20th to the 25th, when the column was recalled to Orléansville, as the Emir's lieutenant, Bou Maza, was in revolt in the territory of Dahra, on the sea coast. St. Arnaud and Canrobert, the commanders each of a column, beat the Arabs in that territory and wounded Bou Maza, but he escaped; the French rear guards were invariably attacked either in advance or retreat, for the country is difficult and the local knowledge possessed by its occupants made this task possible, if not easy. For the time being there came a cessation of



the active fighting, which had lasted for six years; Abd-el-Kader traversing the whole of Southern Algeria tried to raise the Kabyles in the east, but his influence, never great over them, was everywhere waning, and he returned to Morocco to await more favourable chances.

In the spring of 1847 Bugeaud's final and successful attack on the Kabyles took place, but of this Montaudon saw little, as his battalion was in reserve at Aumale. For political reasons Bugeaud left Algiers, and was succeeded by the Duc d'Aumale, to whose deputy, Général de Lamoricière, Abd-el-Kader submitted in December.

Whilst in garrison at Aumale the soldiers were incessantly doing the pioneer work of construction, and Montaudon devoted himself to the study of Arabic. The revolution of February, 1848, saw him at Algiers, and the voting papers forwarded to the men were the cause of much amusement; the soldiers had been long absent and did not know by name the candidates for Parliamentary honours; two men in Montaudon's company voted for the publicans of their native villages, the only public men of whom they carried any reminiscence.

Montaudon accepted employment in the "bureau Arabe" at Milianah, and served there for the two years ending in September, 1850, during the time gaining much information as to the Arab chiefs and their powers, spiritual and temporal. He received the Cross of the Legion of Honour, and returned to his regiment in October.

St. Arnaud commanded an expedition that started in April, 1851, for the province of Constantine; his force was two infantry brigades, a couple of squadrons, and a battery, with Bosquet in command of the 2nd Brigade: this included the Zouave battalion in which Montaudon was serving. On the 9th May they left Milah for Djidjelli on the coast, and on the 11th found the Arabs in position; Bosquet's column carried the heights, but the convoys, ill-guarded by the inexperienced troops of another column, suffered severely. The fighting was constant during the next ten days, and one battalion, surprised with piled arms, lost many men and many muskets; but eventually the Beni-Amran confederated tribes submitted, agreeing to pay taxes and to obey French authority. They had lost desperately in lives and in goods, and all the tribes on the eastern littoral of Djidjelli followed suit. An expedition to the west met with diminished resistance, and returned to Djidjelli on the 16th June.

In all these and similar expeditions the losses in advance, and more seriously in retirements, and again in night attacks, were universally in inverse proportion to the skill and experience of the leaders. Threats in front with flank attacks pushed home were inevitably successful in advance; possession of dominant points, with retirements by alternate echelons, were almost invariably effected with small loss in retreat; but here, as elsewhere, good soldiering was demanded; if detachments or companies were left unduly long unsupported, their retreat was calamitous, and this occurred, and recurred, many times in 1851. Casual firing into camps at night by the Arabs caused practically no loss unless the fire was returned, as that process clearly defined the desired target for the mountaineers.

In all these campaigns the element of sea-power came frequently into evidence ; transports with ammunition and stores moved along the coast, and the columns from time to time got touch with them, placed their sick and wounded in security on board, and promptly returned to their military duties in the field.

In the middle of July, the columns having, during four months, wasted the country and beaten all opposition from Constantine to Collo, returned unopposed to the former place, thence in August to Blidah, and Montaudon was recommended for the command of a battalion.

The non-commissioned officers of the Zouaves averaged thirty years of age, and Montaudon speaks, not in extravagant, but in reasoned phrase of the supreme value that such a body gave to his gallant regiment.

In October one more scheme of flying columns was carried out in Western Kabylia, with Pélissier in chief command. The tribes were excited in the Maatkas country, twenty miles south of Dellis. The plateau was attacked from either side, and the chiefs submitted. In December, Montaudon, again back in Blidah, was appointed battalion commander in the 12th Line Regiment at Médéah, but he had scarcely joined when, in the early days of 1852, he was appointed to raise a battalion of the new 3rd Zouaves ; the intention of the Government being that a Zouave regiment should be in each of the three provinces, and each existing battalion became the nucleus of a new regiment.

The autumn of 1852 was spent in improving the buildings of Sétif and opening roads, but Pélissier had found a hard nut in the garrison of Laghouat, and a column was formed at Constantine in December to go to his assistance. Two hundred of Montaudon's eight hundred were disabled by a winter march of four days, mostly by frost bite during the crossing of the high ground ; but on turning south to the desert they received the news of Laghouat having fallen to assault, and on the 11th they reached Bou Sada, sixty miles south of Aumale, and there met Pélissier. After a week's sport at hawking, the battalion returned to Sétif, and picked up their 200 sick nearly all convalescent. A few weeks' road-making, and in May two more flying columns were launched, and worked forth and back between Sétif and Bougie ; Bosquet was brigadier over Montaudon, and the expedition was successful. In August Montaudon was made officer of the Legion of Honour, and the following February the battalion was ordered to Philippeville to embark for the Russian war.

The history of the Crimean Campaign has been amply written by other hands ; literary men and soldiers, naval men and war correspondents have all had their say, and in many languages ; but there are certain points which General Montaudon's reminiscences bring well into prominence, and on the face of his statements there appear elements of such undoubted honesty of purpose as to carry conviction to the minds of his readers.

One matter of special interest has only been related from hearsay by English writers. The 1st Division of the French Army left the

neighbourhood of Varna for an exploring expedition into the Dobrutcha on the 21st July, 1854, 10,500 strong; they returned to Varna on the 10th August with 4,300 men "*à peu près valides*," the rest were dead, missing, or in hospital.

On the 27th August Montaudon was transferred to the command of the 1st Battalion Chasseurs à Pied, and on the 1st September embarked on board the French frigate "*Pomone*" for transport. Five hundred of all ranks went with headquarters, the remaining fifty in the "*Euménide*" with another battalion. The "*Pomone*" remained three days off the Turkish coast, and Montaudon ignorantly lays the blame of the delay on the British unreadiness; the truth is, not partially, but completely otherwise. In the first place, the English embarked cavalry and fully horsed artillery, which the French did not; and in the second place, it is on unimpeachable record that the French Admiral Hammelin informed Admiral Dundas that the steam power of the French war-ships had been erroneously calculated, and it was insufficient to move the sailing transports at the agreed speed; hence the delay.

At 7.30 a.m. on the 15th September the French began their disembarkation near the old fort, and by sundown 20,000 were landed. The delay of advance till the 19th arose from a variety of circumstances, of which Montaudon was either ignorant or which he misread.

The French had the best of the beach, and in their advance both flanks were secured, the right by the sea, the left by their allies; at 1 p.m. the combined army reached the high ground between the Bulganak and the Alma, drove in the enemy's scouts, and bivouacked in line of battle, but, the English left flank being "*en l'air*," was refused, hence a portion of the delay the next morning before the refused flank could be brought up into the general line of advance. He quite misapprehends the reasons for no pursuit having been satisfactorily carried on after Alma; the French system of leaving packs behind had far more to do with the matter than the supposed unreadiness of the English. The whole battle is described from the point of view of a Frenchman, and his view will go down to history, for the celebrated picture, formerly owned by Prince Napoleon, makes him—the Prince—the most prominent assailant of the Russian army in position! St. Arnaud's despatch answers his subordinate; writing after Alma he says, "we have been compelled to remain here in order to send our wounded and those of the Russians to Constantinople, and to procure ammunition and provisions from the fleet."<sup>1</sup>

We may pass over the contentious matter of the flank march, a subject on which all students have long since agreed to differ, but Montaudon's eye-view of the action known as the battle of Balaklava is curiously misleading. He was part of Bosquet's division in the Col de Balaklava, a mile and a half from the 93rd Highlanders, but he describes them as some battalions of Highlanders in squares, charged three times by the Russian cavalry, and so forth. His description of Inkerman is good, and no Englishman but can have a warm heart for Bosquet and his

<sup>1</sup> "Campaign in Turkey," p. 380.

Zouaves since that day. On the 9th November Montaudon was nominally transferred to the regimental command of the 10th L<sup>é</sup>ger in France, but remained attached to the 50th Line, till in February he was given command of the newly-formed Zouaves of the Guard. His feeling for the terrific loss his old regiment suffered in repulsing the night attack on the 22nd March appeals to any soldier.

He was not present at the capture of Kertch, and his hearsay description is quaint—he declares the Turks to have violated and killed, the English to have pillaged, and the French to have contented themselves with getting drunk. Montaudon's health gave way in July, and he went on board the "Charlemagne" for a week, found himself transferred to command the 42nd Line, of which the three battalions combined numbered 750 men. In August his health again failed, and whilst at Constantinople he received news of the fall of Sevastopol; he at once returned to Kamiesch, and found half his regiment *hors de combat*.

Montaudon states that the French army lost 74,000 men during the campaign—one-third by injury, two-thirds by disease. At the peace he was appointed to command the 2nd Regiment of Algerian Rifles, but no sooner landed at Mostaganem than he was transferred to Paris to form the 4th Regiment of Voltigeurs of the Guard, which he commanded during the Italian war of 1859, having taken unto himself a wife in 1858. The Italian war, according to the statement made by Napoleon III. to Lord Malmesbury, cost France thirty million sterling, in return for which she earned the hatred of Italy and annexed two provinces. The details of the war have frequently been published, and Montaudon throws no great light on the military matters; and when he diverges into politics and history, neither of which are "*faits d'armes qui se sont passés sous ses yeux*," he is woefully at sea. Prussia had acquired Schleswig-Holstein some years before 1867. One or two incidents fell under his notice, none of which were new or surprising. The French troops, like others, are subject to inexplicable night-scares, and Prince Napoleon's troops were backward so long as the enemy was firm. The French staff made bad arrangements for marches and commissariat supply, and 1870 showed no appreciation of their errors and incapacity which had been proved to demonstration in 1859.

## LINES OF CONCENTRATION OF THE GERMAN ARMIES TOWARDS THE FRENCH FRONTIER.

Translated from the "Voïénnii Sbórnik."

THE present conditions of mobilisation and concentration of the German Army have materially changed as compared with those obtaining in 1870. To begin with, the war changed the configuration of the frontier. The present boundary, beginning a few miles to the north-east of Porutron, traverses the dip between the Jura and the Vosges (the Belfort Pass), which is of a breadth of from 16 to 26 miles; then, for a distance of some 56 miles, it runs along the crest of the Vosges to the sources of the Sarre, and, trending north-west, intersects the tableland of Lorraine. Some 5 miles from Thionville it trenches on the boundaries of Luxemburg. The entire length of it is 187 miles, or 156 as the crow flies. The Vosges, which, between the Belfort Pass and the tableland of Lorraine, divide the two States, form a natural barrier, the average height of which is 2,500 feet, while some peaks reach an elevation of 4,500 feet. Richly wooded as they are, although they are traversed by a few roads they present serious obstacles to the movement of large bodies of men. Hence the Belfort Pass and the Lorraine Plateau are the natural doors of communication between the two countries, and have consequently the greatest strategical importance. Through them pass the main lines of advance from Germany into France, and *vice versa*.

The present configuration of the frontier of Germany and the readiness for mobilisation of her Army being such as they are, the region of concentration, in case of war with France, can be determined without fear of mistake. Germany now holds a strong natural bastion, projecting far into France, and constantly threatening Paris. Metz lies at the apex of the salient angle of this bastion; its sides are formed by the Moselle and the Sarre, while the Vosges and the Rhine form the curtain. From this bastion the German armies will move out against the French, and in order to secure the success of this movement strong fortresses have here been erected, and a strong body of troops collected to cover the concentration from a sudden forward movement of the enemy, and a vast network of railroads constructed, both within the bastion and to connect with the parts of the Empire to its rear. Within the limits indicated the region of concentration comprises the Reichslande, the Bavarian Palatinate, and a part of the Rhine Province. Topographically speaking, the greater part of the region belongs to the



valley of the Rhine, but on the south it is completed by the Vosges, and on the north stretch the hills of the Lorraine Plateau and Hunsrück. The principal river in the region is the Rhine, but the Moselle, the Sarre, the Lauter, and the Queich also pass through it.

To concentrate in the bastion beyond the Rhine is of itself an earnest of offensive movements. While, in this respect, it has material advantages, there are also certain grave defects attaching to it. Out of the whole course of the western frontier of Germany, a distance of some 660 miles, only some 187 belong to the Franco-German boundary properly so-called. Moreover, the country along that boundary is, as we have seen, not always suitable for the movement of large bodies of troops. This fact necessitates the massing of troops, in the strategical deployment of the armies, opposite the above-mentioned natural gates of Alsace-Lorraine, and thus narrows considerably the space available for the immediate disposition of the forces. In addition to the technical difficulties to be encountered with regard to the movement, disposition, and supply of the forces in the field, such a close disposition gives no scope for strategical combinations. The large clusters of fortifications erected by France along her first line of defence still further contract the front of advance of the German Armies. Moreover, the region of concentration is cut off from the rest of the Empire by the broad stream of the Rhine, so that the means of communication entirely depend on the number of permanent bridges across that river. Both these facts have materially hindered the solution of many questions raised by the preparations for taking the offensive against France.

Certain material disadvantages attach to the configuration of Germany in a strategical sense. In regard to compactness of territory, which has a serious military importance, the realm of the Hohenzollerns is certainly inferior to France. As regards the general contour of its frontiers, though it forms a fairly regular quadrilateral, long in proportion to its width, yet it has three principal projections—East Prussia, Silesia, and the South German States—which mar its regular shape. All the chief rivers of Germany flow in the same general direction, viz., from south-east to north-west. For the organisation of defence on the eastern and western frontiers this direction has undoubted advantages, since great rivers like the Vistula, the Oder, the Elbe, and the Rhine, barring the enemy's line of advance, form formidable natural obstacles. In preparing for offensive action on these frontiers, however, their course becomes a disadvantage in two ways. Firstly, it hinders communication between the respective fronts, and also it prevents the use of the streams, which would be very useful as means of transit. Long and determined efforts have been needed to obviate the prejudicial effect of the general geographical features of the country on preparations for offensive war, and to carry these preparations to the degree of completeness which they now possess; but to entirely remove these natural obstacles has, of course, been out of the question.

However this may be, contemporary authorities on the concentration of the German Army on the French frontier are agreed that the general

staff has determined to make this trans-Rhenane bastion the base for the invasion of French territory, and has carefully taken measures with that view. The chief *point d'appui* of the district, Metz, is 167 miles distant from Paris. The concentration on the far side of the Rhine is covered, in the first instance, by the chain of fortresses built to correspond with the direction of the principal lines of operation. On the French side these lines pass through Lorraine, from which they lead either to Mainz, across the heights of Hunsrück and Haardt, or to Strassburg and the valley of the Rhine. There are also two minor lines, viz., in a northerly direction by the valley of the Moselle into Westphalia, and southerly along the southern slope of the Vosges through the Belfort Pass. The advanced chain of the German fortresses is on these lines and in a position to command them; it runs along the frontier, and comprises five fortified points. The second chain is directly connected with the admirable defensive line of the Rhine, and bars all the roads across that river to the capital and the interior of Germany.

In constructing them especial attention was paid to securing the *Aufmarsch* of the German Armies. The strategic importance of Metz, with its impenetrable *enceinte* and nine detached forts, is due to its lying at the junction of the roads from France through Lorraine to Cologne, Coblenz, Mainz, and Strassburg. The exit from the Ardennes hills is barred by the fortress of Thionville, lying to the north of Metz, and the principal railway station is protected by the fortifications of Saar-Louis. The line from Haguenau to Metz, where it passes through the Vosges, is covered by the fortification of Bitsch. Strassburg belongs at once to the Alsace-Lorraine and the Rhine chains. Lying opposite the Belfort Pass, and at the junction of the railway lines connecting Italy, Switzerland, France, and Germany, it forms a very strong place of arms, enabling the German forces to be brought right up to the frontier.

The permanent quartering of considerable numbers of troops in Alsace-Lorraine also serves to cover the concentration on the French frontier. The XVIth Corps, head-quarters Metz, comprises 26 battalions, 20 squadrons, and 22 batteries; the XVth, head-quarters Strassburg, has 35 battalions, 20 squadrons, and 22 batteries, and the XIVth, head-quarters Karlsruhe, has 32 battalions, 20 squadrons, and 23 batteries, or a grand total of 95 battalions, 60 squadrons, and 67 batteries. These can be at once reinforced by the 16th Infantry division of the VIIIth Corps, quartered at Trèves. All these regiments are kept in such a state of readiness that they can at once take the field, either to cover the assembling of their own forces or, if necessary, to threaten the assembly of the French Armies.

In 1870 the German Army was ready to advance eighteen days after the order to mobilise was given. Though the number of the forces to be put in the field is now far greater, yet all the machinery for placing them on a war footing has been so much improved that the mobilisation will certainly take even less time than it did then. The system of railways is also most complete. The disadvantages, in a military sense, of the geographical position of Germany have had much to do with the

construction of such a network of lines as would meet all possible demands. One proposal was to have three groups, as follows:—Metz-Thionville, Metz-Saarburg, Strassburg-Mulhausen, and to have a close connection between these groups, and also between the base on the Rhine and the north-east part of the Empire. The question was most carefully considered, and if in Prussia they are not wholly satisfied with the result, yet on the other side of the Vosges the present system is acknowledged to be a model from a military point of view. As it has approached nearer to perfection the distribution of troops has also been changed, with a view to facilitating the *Aufmarsch* of the Armies in the region of concentration.

To get a clear view of the conditions, it is imperative to consider the existing railway system in connection with the distribution of troops through the country in peace-time. On the French frontier are stationed three army corps, with the Bavarian and Saxon troops attached to them, the XIVth, XVth, and XVIth. The greater part of the district of the XIVth Corps is on the right bank of the Rhine, and here its limits coincide with the boundaries of the Grand Duchy of Baden. Those of the XVth and XVIth Corps, with their headquarters at Strassburg and Metz respectively, extend along the frontier, embracing the German portion of Alsace and Lorraine as well. Thus, in case of mobilisation, it is only those troops that are quartered in Baden, or stationed at Karlsruhe and Freiburg, that will have to be called in. The following lines will be used for transporting them:—1. Karlsruhe, Appenweiler, Strassburg, Colmar. 2. Freiburg, Neu-Breisach, Colmar. And, 3. Constance, Hennigen, Mulhausen, Colmar. The second group of Corps comprises the VIIth, VIIIth, XIth, XIIIth, and the two Bavarian Corps, or six in all. The headquarters and district centres of the VIIIth Corps are echeloned along the line Cologne, Coblenz, Trèves. One of its infantry divisions and a cavalry brigade are quartered two or three days' march from Thionville, whither they can be sent in readiness to take the field. The remaining troops would reach Trèves by two lines from Cologne and Coblenz, whence they would be carried by rail along the double line to Thionville. The natural line of concentration of the VIIth Corps is the line from Münster through Düsseldorf, Cologne, and Trèves to Metz, as on the portion of this line between Münster and Düsseldorf are situated the rallying centres of this Corps.

The XIth Corps can use, as in 1870, the line Cassel, Fulda, Frankfurt, Darmstadt, Mannheim, Neustadt, Saargemund, Deutz, and the XIIIth that which passes through Ulm, Stuttgart, Ludwigsburg, and Karlsruhe to Strassburg. By this line also would be sent to the front one of the divisions of the Ist Bavarian Corps, while the IInd Division would go from Munich by the Black Forest Railway to Freiburg, and thence to Strassburg. Lastly, the IInd Bavarian Corps would reach the Rhine by the lines from Würzburg to Hermsheim, and from Nuremberg to Mannheim, and then go on to Bitsch and Zweibrücken by the Palatinate Railway, which admits of six lines of concentration.

This group of corps districts clearly gravitates, both in a geographical

and a strategical sense, towards the western frontier. A central position between the two frontiers is occupied by the districts of the Xth and IVth Corps. To carry the former to the western frontier there is a separate line from Hanover, the rallying centre of the district, to Cologne, from which the corps would be taken to Metz by the same line as that used by the VIIth, so that the plans for transporting these two corps are closely connected. The IVth Corps can be set in motion from Magdeburg and Erfurt by Cassel and Frankfort to Mainz, and thence by Bingen to the Metz-Saarburg branch.

Of the remaining corps, five are, by their districts, immediately affected to the north-east frontier, while four others gravitate towards it. Nevertheless, there is no difficulty in assembling the troops of both groups on the western frontier. The IXth Corps, which garrisons Flensburg, Altona, and Schwerin, can reach the Rhine either by following, as far as Münster, the same line as the VIIth Corps, or by Hanover, on the same line as the Xth. The Corps of Guards and the IIIrd Corps would use the direct line running from Berlin through Wetzlar to Coblenz, and thence by the Moselle valley to Metz. The XIIth Corps would go from Dresden and Leipzig by lines which pass through Southern Bavaria and Baden. It would be followed by the VIth Corps from Silesia. Its neighbour, the Vth, can be sent forward by Berlin, and, in part, further south along the Benstein-Huben-Halle line. The Ist and XVIIth Corps would also pass through Berlin and thence to Stettin, together with the troops of the IInd Corps.

Thus, by building 16 railway bridges over the Rhine, and making the distribution of the troops in garrisons correspond with the general direction of the lines of railway, the central military authorities have secured a wide space on which to fit in the required number of lines of concentration. The increased rapidity of mobilisation of the German forces as compared with 1870, the increasing of the lines of concentration westward almost twofold, the increase in their power of transport, and their readiness for the immediate transport of troops on mobilisation being ordered, all give grounds for concluding that the 18 days necessary in 1870 will be diminished by nearly half. It must be remembered, however, that the number of men to be put in the field is very much greater, and thus the task imposed on the railways is a harder one. To some extent the time occupied by the *Aufmarsch* will depend on the number of corps employed. Most authorities fix this at 14, so that many of them can be carried by two lines, which will make the process very short.

The base of the Armies assembled in Alsace-Lorraine will be on the Rhine. It has been prepared with the care which characterises all German preparations for war. Excluding Strassburg and Kehl, there are on that river three great entrenched camps, and several fortresses of the second rank. In the southern portion of its course is Neu-Breisach, a strong *tête-de-pont* on the left bank, which guards also the point of detrainment of one of the strategical lines of southern Alsace. Then at the point where the Black Forest approaches the Rhine lies Rastatt, and a little lower Germersheim, both second-class fortresses. At the junction

of the Main with the Rhine rise the ramparts of a strong entrenched camp, Mainz, which secures the passage, bars the lines of operation through the valley of the Main, and commands the numerous railway lines which meet there. Mainz is the principal dépôt for supplies on the base, and its workshops, factories and magazines are calculated for the supply of 500,000 men.

On the branch between Mainz and Cologne the only place suitable for crossing the Rhine is at Coblenz where the Moselle joins it. That place is consequently strongly fortified; it bars the road from Metz by the valleys of the Moselle and the Lahn to the valley of the Weser and the centre of Germany, and guards the passage of the Rhine and the Moselle. Lastly, the base of attack on the fortresses of the French frontier is furnished by the portion of the line of fortresses, some fifty-four miles long, which includes the fortified camp of Cologne-Deutz; and the forts of Hamme and Wesel.

As regards the plan for initial operations, it may be summed up in Moltke's words:—"Operations against France will be initiated by crossing the frontier with all our troops well in hand; we shall then advance till we meet the French Armies, and give them battle." Whether systematic preparation can ensure success in a conflict with France as she now is, after a complete military transformation, remains an open question.



## BROADSIDE SUBMERGED TORPEDO-TUBES.

Translated from the "Mittheilungen aus dem Gebiete des Seewesens,"  
January, 1898, by Fleet-Engineer T. J. HADDY, R.N.

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THE first attempt in the construction of such an apparatus dates from the latter half of the seventies, but from the many defects inherent to the plan of this "training" submerged tube it was soon dropped, as it was recognised that to run torpedoes from it with any chance of success was impossible. The introduction of the suspension principle in torpedo-tubes for above water got over the principal difficulties for this system of discharge; but at the same time some of the Powers grappled with the difficulties of the submerged broadside problem, although these difficulties were much increased during this period by the rapid increase in the speed of ships of war. The introduction of quick-firing guns and improvements in artillery generally were seen to be powerful opponents to the torpedo above water, and this was a sufficient incentive to the production of the submerged tube.

The first result obtained in this direction was won by England, with a submerged tube invented by Captain Wilson, for broadside discharge, and this plan has for many years been introduced into the battle-ships of that Navy—a distinctive step in advance. As the English apparatus is kept secret, our knowledge of it is confined to the principle on which it works, and not to the details of its construction. Its success, however, may be judged of from the fact that the Admiralty has constantly shown itself averse to the introduction of any other plans, many of which have been invented and proposed. The action on the Yalu river, in the Chino-Japanese war, brought into prominence the danger of the above-water tubes, in which the prepared torpedo must of necessity be kept exposed and ready for action. The question of submerged discharge has consequently assumed immense importance, and stimulated also private manufacturers to study some means of solving the problem.

Very little has been made public as regards the various projected plans and experiments of the different Powers, but the world-renowned firm of Armstrong & Co. has constructed and fitted submerged discharges in the ships ordered of this firm by the Japanese Government, some account of which type of discharge has come to light. The tubes of the above firm were installed on board the battle-ships "Fuji" and "Yashima," and were tried in the first-named ship in July, 1897; a report of the trials appeared in the *Army and Navy Gazette*, extracts from which we reproduce. "The trials

gave very good results, and it is worthy of notice that these two Japanese battle-ships are the first to be provided with tubes of this type. The Japanese Admiralty, as the result of their Yalu experiences, determined on fitting submerged discharges in their new ships, and consequently persuaded the Armstrong firm to undertake experiments with models, with a view to perfecting the design. The results were so satisfactory that the Japanese Admiralty approved the design and ordered the tubes to be fitted. By this action the Japanese are now in the possession of broadside submerged discharges which are very successful, and in many respects are an improvement on those in use in the English Navy. In the Armstrong tubes the discharge may be effected either by air or steam pressure or powder (cordite) impulse; the latter is recommended for its simplicity. Whilst in the English apparatus the torpedo during discharge from the tube into the water must be held against the protecting shield, in the Armstrong plan the shield is not only projected and withdrawn automatically, but with extraordinary swiftness; which has the great advantage that the inner tube and the shield of which it is a prolongation are not exposed to the excessive strains, due to the resistance of the water, which it otherwise would be. After the torpedo is placed in the tube the whole of the firing may be carried out from the deck if desired, so that the presence of the torpedo crew by the tube is unnecessary. At the trial the 'Fuji' had a speed of 16 knots, and used an impulse of 13.7 metre-seconds (26.65 knots), which was found sufficient for the rapid and efficient working of the apparatus, the direct impulse on the torpedo not exceeding a pressure of two atmospheres. The torpedo used was one of Mr. Whitehead's, and although repeatedly fired, fished up and again loaded, showed absolutely no injury at the end of the trial.<sup>1</sup>

As regards the experiments of other Powers we have not much information, which is partly due to the fact that great secrecy is observed, and no doubt partly that the experiments have not been very successful. As far as we know there exists at present only two types of broadside under-water torpedo-discharge in operation. In the first type the torpedo is laid in a shield of considerable length which acts as a guide bar presented sideways, and the torpedo is pushed along it by the impulse until it is clear of the ship's side, when it is let go. In the second type the torpedo is placed in the inner-tube before mentioned, which carries at its outer end a short shield. The inner tube takes the chief impulse, and conveys it to the torpedo, which it accompanies until the tail is clear of the ship's side, and is then rapidly and automatically drawn back again. At the instant the inner tube begins its backward movement, the torpedo receives a second impulse, generally by air pressure, which enters the inner tube and accelerates the velocity of discharge. By reason of the

<sup>1</sup> "This does not appear very probable for many reasons, and no torpedo exists which would stand this kind of handling without showing traces of it." In England the Wilson system was tried recently in H.M.S. "Powerful" with very good results, the speed of the ship being the highest attainable under natural draught power.—T. J. H.

shortness of the shield the torpedo is deflected on entering the water, the deflection being in direct proportion to the speed of the ship, and it appears to us not altogether free from doubt that the torpedo may suffer deformation also during the process. The first-mentioned type is very simple, and does not need to be described; not so the latter, which consists of the following parts:—1. An outer tube, the mouth of which is secured to the ship's side, and in which the inner tube works. 2. An inner tube co-axial with the first, and which contains the torpedo for launching; it is fitted with a short protecting shield for the torpedo at its outer end, at the side towards the bow of the ship. This tube is movable in the outer case within certain limits, it receives the first impulse, carrying the torpedo with it a certain distance, when it is quickly withdrawn, the torpedo at the same time receiving a second impulse by specially fitted arrangements for the purpose. 3. Automatic gear for withdrawing the inner tube. 4. One or two tube reservoirs, and a chamber for the impulse charge. 5. Valve gear for regulating the movements of the launching apparatus. 6. Firing gear. 7. A sluice valve for closing the inner tube against the sea.

The operation of firing the torpedo is as follows:—On depressing the firing lever the air is admitted from the tube reservoir into the outer tube and pushes forward the inner tube with the torpedo in it. The movement of this tube is limited by an air-compression buffer (like the cushioning in a steam cylinder), which is then in a condition to assist the backward movement of the inner tube, which is effected by opening the air impulse in the outer tube to the exhaust as soon as it has accomplished its purpose. At this instant the torpedo receives its impulse in the inner tube by means of a special air reservoir, and its projection out of the inner tube and shield is effected. At the same time the air lever is thrown back and the engines started. This apparatus has the advantage that it is lighter than the first mentioned; whether it also equals it in security can only be determined by experiments. In our opinion, a combination of the two systems would be best, although it might necessitate considerable increase in weight.

The forces which affect the torpedo during discharge are so complicated in their nature that the problem of under-water discharge can only be solved satisfactorily by lengthened experiment. It must be clear to everyone, however, who studies the problem that the constructor finds himself between Scylla and Charybdis. If he gives the shield considerable length, he runs the risk of its bending, and so cause the jamming of the torpedo, whilst if it is too short the torpedo will probably be found minus its tail. The Obry torpedo steering apparatus will contribute to lighten the problem considerably for future constructors of submerged tubes, as it will admit of the employment of higher impulse, thereby shortening the critical period of discharge when the torpedo is not yet free, but is subjected to the side stress due to the water resistance; shorter torpedoes also could be used, which is another great advantage, as we shall show.

As yet, in all systems of submerged discharge, in order that

the torpedo may run successfully and be subjected to no accelerating or retarding impulses when left to itself, the velocity of impulse due to the launching apparatus has been made just equal to the maximum speed of the torpedo itself. Thus too strong an impulse induces a turning couple in the torpedo, tending to raise the nose and bring it to the surface, whilst if the impulse is too weak, a couple in the opposite direction is induced, which causes the torpedo to dive at the commencement of its run (see *Mittheilungen*, 1890, p. 537; also Vol. XI. JOURNAL R.U.S.I., p. 1526). This evil cannot be entirely overcome by locking apparatus for the horizontal rudders of the torpedo, as the torpedo still deflects on unlocking, so that a very high impulse, with a view of shortening the critical period of discharge, is practically excluded. It must also be remarked that with the properly adjusted velocity of discharge a considerable deflection sideways due to water resistance must be expected. The improved Obry apparatus of Messrs. Whitehead from this point of view is especially valuable, as it eliminates every deflection which the torpedo may be subject to on discharge. In fact, experiments have shown that with altogether unsuitable discharging apparatus the torpedo fitted with the Obry regulator has still maintained its direction. It therefore follows that in future designs of broadside discharging apparatus a much higher impulse may be used, provided that the torpedoes are fitted with this steering gear. The tendency of the torpedo either to dive or spring out of the water at the commencement of its run can be met by properly locking the horizontal rudders or by making the tubes with considerable depression. At present the speed of the torpedo, and therefore its impulse velocity, is about 13 metre-seconds; but supposing it to be increased to 18 metre-seconds, this will only mean a reduction of the critical period, when shield and torpedo are subjected to water resistance, in the proportion of 1 to  $\cdot 76$  units of time.

We now come to the discussion of the employment of shorter torpedoes for the broadside tubes instead of the torpedoes of at least 5 metres (15 feet 6 inches long) at present used, short torpedoes not having the necessary stability in direction. Meanwhile, with the direction regulator above mentioned, we now have in the 45-centimetre torpedo of 4 metres length supplied by Messrs. Whitehead, a type of torpedo excellently adapted for broadside discharge, supposing it to have a range of at least 800 metres. Supposing that with the 45 centimetres, 5.4 metres long torpedo as generally used, and with the ordinary conditions of impulse, etc., the critical period is 1 unit of time, then under the same conditions with the short torpedo it is reduced to  $\cdot 74$  unit. We will now consider somewhat closer the conditions affecting a protecting shield of sufficient length.

The protecting shield may be considered at the termination of the period of discharge as a fixed beam projecting at right angles from the ship's side and unsupported at its outer end, subjected sideways to the pressure of the water, due to the ship's motion through it, both on itself and on the torpedo, which may be regarded as the load it has to carry. As this load is very great at considerable speeds of the ship, it

could not be borne by the protecting shield for any considerable time, and in case, for instance, that the guide of the torpedo should get wedged in the shield near its outer end, the shield would be in danger of breaking at its weakest point, the section near the ship's side, and the torpedo also would be injured. That the shield must also bend somewhat under ordinary launching conditions is obvious, also that this bending must be inconsiderable and inside the elastic limit of the material. This bending under known conditions is represented by the formula  $\delta = \frac{\frac{1}{2}P + \frac{1}{2}Q}{EJ} l^3$

in which  $\delta$  is the amount of deflection at the outer end of the shield in the direction of the forces  $P$  and  $Q$ ,  $P$  the pull of the torpedo on the end of the shield during discharge,  $Q$  the load on the shield through the water pressure,  $J$  the moment of inertia of the section of the shield, and  $l$  the length of the shield. That the stress on the torpedo and shield is relatively great and only prevented from being injuriously so by its short duration may be concluded with comparative certainty, as the bending of the shield according to the laws of uniformly accelerated motion which it follows will vary with the square of the time during which the forces act. If we consider that with the employment of both improvements we have suggested, viz., increased impulse and shorter torpedo, the duration of the critical period is reduced from 1 to .56 it is plain that  $\delta$  in the above formula will be reduced to  $.56 \times .56 = .31$  units of time.

Many advantages are deduced from this improvement, one of the greatest is the possibility of changes in the form of the shield whereby fatal accidents such as the jamming of the guide of the torpedo in the groove, or the fracture of the guide on the torpedo, may be prevented. If the form of the shield be retained, then, through the reduction of the critical period, the torpedo may be discharged at higher speeds of ship than is as yet possible. In the construction of broadside submerged, launching apparatus, weight, space and expense should not be too narrowly guarded, as unjustified economy can only result in a breakdown in action, and that the torpedo would eventually only succeed in causing serious injury to the ship from which it is discharged. The construction of the shield is of the greatest importance. It should be an independent part of the apparatus, and loaded with as few fittings as possible. The inner tube should be dispensed with, and the shield fitted direct to the piston of the outer tube; the second impulse direct on the torpedo should not be required. It is of first importance that the torpedo should not leave the shield until clear of the ship's side; this necessitates a comparatively long shield, with a considerable moment of inertia in its cross section. If the size of the bar should exceed the space between the frames of the ship, the constructor should not hesitate to cut away another frame to make room for it. The size and weight of the shield will of course also affect the construction of the other details to a great extent, and these must also be proportionately massive. We can only recommend air pressure for impulse, and the more so, that fittings for the same are already provided.



Powder and cordite should only be relied on as auxiliary means to be employed in case of breakdown of the air supply, and the torpedo must be launched at all costs.

The principal cause which has hindered the employment of broadside submerged discharge, independently of the great increase in the speed of the ships, is the great weight of the apparatus. In fact, an installation of four submerged discharge apparatus weighs not less than 60 tons. In an already completed ship, this addition to the weight is considerable, and in general it would not be possible to provide the necessary space and structural alterations without injuriously affecting the other fighting qualities of the ship. Even in new battle-ships of large displacement, either for the line of battle or coast defence, an installation of such apparatus requires serious consideration. How far the total displacement is affected, the following considerations may show.

Take first a battle-ship of 8,000 tons with no under-water discharges, and in which the displacement is utilised as follows:—

1. Hull and equipment	-	-	-	-	3,040 tons.
2. Armour	-	-	-	-	1,864 „
3. Machinery and coals	-	-	-	-	1,896 „
4. Artillery, crew, stores, boats, etc.	-	-	-	-	1,200 „
					<hr/>
					8,000 „

We now have to consider a sister-ship with equal artillery, speed, and radius of action, which has to carry in addition four under-water tubes of sixty tons weight. In order that the above conditions may be fulfilled, it is not sufficient to increase the displacement simply as the weight of the apparatus, but there must be a proportionate increase in engine power, in coal supply, and the area to be fitted with armour, or, in round numbers, it may be shown that the displacement will be increased by 195 tons. This increase is far from trifling, it is true, but would be well employed in the improvement of the ship as a fighting unit. In most cases, however, it would not be necessary to go so far as this, and it would be sufficient for the constructor to lengthen the original design amidships to give the necessary additional displacement equal to the weight of the tubes. The armoured area need not be increased if the ship is not armoured from stem to stern. If the increased length results in a better form of ship in the wave lines of the after part, an increase of engine power also would probably be unnecessary.

In conclusion, we may remark that Messrs. Whitehead are about to construct a broadside submerged discharge apparatus, which, so far as our information reaches, bears promise of success.

NOTE.—It may be added that Messrs. Whitehead have already obtained very valuable experience with a former design of their own, and all who have any acquaintance with this firm will agree in the conviction that it is fully equal to a satisfactory solution of the various and difficult problems which this system of discharge presents.

## NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Rear-Admiral—A. L. Douglas to command of East Indian Station. Captains—C. G. Drury to "Rupert" as Senior Officer at Gibraltar; P. W. Bush to "Eclipse"; W. H. Henderson to "Nile"; J. Ferris to "Arrogant"; F. H. Henderson to "Fox"; C. J. Briggs to "Revenge"; F. T. Hamilton to "Defiance." Commanders—A. W. Torlesse to "Royalist"; W. Carey to "Jaseur"; G. Hewett to "Raccoon."

The first-class battle-ship "Cæsar" was commissioned on the 13th ult. for service on the Mediterranean station, in place of the "Nile"; unfortunately, during her gun trials some serious defects exhibited themselves in the gun-mountings of her barbette guns; her sister-ship the "Victorious" has accordingly been detached from the Channel Squadron and has proceeded to the Mediterranean; from which station she is, however, now to proceed to China. The first-class battle-ship "Barfleur" has also been ordered from the Mediterranean to China to reinforce our squadron in those waters; she is a sister-ship to the "Centurion," the present flag-ship on the station. The second-class cruiser "Flora" left on the 24th ult. to relieve the "Retribution" as flag-ship of the Commodore on the South-East Coast of America. The third-class cruiser "Raccoon" has been commissioned to relieve a sister-ship, the "Brisk," on the East Indian station. The first-class battle-ship "Nile" and the second-class battle-ship "Devastation" paid off at Devonport on the 13th ult.; the officers and crew of the latter turned over to the "Nile," which recommissioned on the following day as port guard-ship. The second-class cruiser "Cambrian," lately returned from the Mediterranean, paid off at Devonport on the 14th ult. The sloop "Buzzard" arrived at Plymouth from the West Indies on the 16th ult., and will pay off at Sheerness. The second-class cruiser "Sirius" left Plymouth on the 14th ult. for Malta with a new crew for the "Surprise." The first-class cruiser "St. George," late flag-ship of Rear-Admiral Sir H. Rawson, K.C.B., on the Cape station, arrived at Portsmouth on the 25th ult.; her commission has been a somewhat eventful one, owing to the number of expeditions in which her crew have been engaged on both the East and West Coasts of Africa; on the 2nd inst. her men were sent to Osborne, where they were inspected by Her Majesty in the grounds of Osborne House. The second-class cruiser "Hermione" paid off at Devonport on the 26th ult., her place in the Channel squadron having been taken by the new second-class cruiser "Arrogant."

A serious disaster occurred on the 26th ult. on board the gun-boat "Bouncer," tender to the Naval Gunnery School at Sheerness, whilst at gun practice near the Nore. The "Bouncer" was out with two training classes from the School of Gunnery, in charge of Lieutenant John E. Drummond, R.N. Some seven or eight rounds had been fired with her 6-inch Q.F. gun, and on the gun being again loaded the cartridge prematurely exploded in the breech from some cause which has not yet been ascertained. The breech had not been locked, and, there being no resistance, it blew open, with most disastrous consequences. The gun itself received only slight damage, but the discharged cartridge carried destruction to the ranks of the gun detachment, two petty officers being killed, and six men being wounded.

The new torpedo-boat destroyer "Seal," built by Messrs. Laird Brothers, Birkenhead, has completed on the Clyde her official full-power coal consumption trial with the following satisfactory results :—Speed on mile 30·04 knots with 37·05 revolutions, and speed on three hours' run 30·02 knots.

The "Wolf," another destroyer built by the same firm, has also completed on the Clyde her official full-power coal consumption trial with satisfactory results, the mean speed obtained on six runs over the measured mile being 30·3 knots with 370 revolutions, and the speed for three hours' run 30·11 knots.

The torpedo-boat destroyer "Dasher," after having new boilers put in, has had a trial of her machinery at Portsmouth. She was required to develop 3,800-H.P., but the mean of the three hours was 3,718, against 3,619 which she averaged at her previous unsuccessful trial. During half-an-hour of her run she exceeded her requirements by 30-I.H.P.

Some experiments were carried out by the Gunnery Establishment at Portsmouth lately with the view of testing the powers of corn-pith cellulose in stopping leaks. It is an American invention, and is said to possess great advantages over cork when used for packing cofferdams at the water-line in the unarmoured ends of ships of war. A cofferdam had been erected in the "Nettle" 3 feet thick, and it was tightly packed with cellulose blocks. In front and at the rear of the cofferdam were steel plates so as to represent the side of a ship. From a 5-inch gun a 50-lb. shell was fired into the structure. The shell burst inside the cofferdam, blowing out a part of the rear plate and some of the cellulose. After this the water test was applied, water being made to flow into the shot-hole in front. In about twenty minutes it had soaked through the packing, and was pouring out through the rent in the back plate. So far as shell fire was concerned, therefore, the result of the trial was not altogether favourable to the new invention.—*The Times and Naval and Military Record.*

#### THE TRIALS OF THE "DIADEM."

The new first-class cruiser "Diadem" has been carrying out her steam trials in the Channel, which have proved very satisfactory. Her first trial was a thirty hours' run at one-fifth her total H.P. Considerable interest was taken in the trial, as the "Diadem" is the first of a new series of modified "Powerfuls," and the experience gained in the "Powerful" and her sister, the "Terrible," had led to several important and interesting developments. The "Diadem" and the "Powerful" carry the same broadside armament, but whereas the latter carries a 9-inch gun forward and another aft, the "Diadem" mounts two 6-inch Q.F. guns in each position. Both in engines and in boilers the "Diadem" marks a considerable advance upon her predecessors, for while in the "Powerful" the ratio of high pressure to low is as 1 to 5·7, in the "Diadem" it is as 1 to 7, thus giving greater economy at high speeds, although affording no material advantage at low speeds. The engines of the "Powerful" can carry a steam pressure of 210 lbs. to the square inch, but in the "Diadem" a pressure of 260 lbs. can be obtained with a corresponding increase in both ships of 40 lbs. in the boilers. The "Diadem," being of 3,000 tons less displacement than the "Powerful," and being 65 feet shorter, carries only 1,500 tons of coal in her bunkers, against 3,000 tons in the bunkers of the "Powerful." It is, however, in the new arrangement of the Belleville boilers that the greatest difference is to be seen, for while in each of the 48 boilers of the "Powerful" there are 20 tubes to an element, all of the same size, in each of the 30 boilers of the "Diadem" there are 28 tubes to an element, but the heating surface is in both arrangements the same, there being for every square foot of grate 20 square feet of heating surface. This is effected by dividing in the "Diadem" the heating surface into two parts, the lower part, consisting of the ordinary Belleville boiler, having 14 tubes to an element, while the upper part, which consists of 14 very much smaller tubes, is known as the

economiser. Between the boiler proper and the economiser there is a combustion chamber, so that at the higher rates of speed the gases, by means of a jet of air introduced under the economiser, are relighted in the combustion chamber and warm the water contained in the economiser. It is therefore anticipated that the ships of the "Diadem" class, besides getting rid of the smoke and flame which formerly issued from the funnel when steaming at high rates, will be economical coal consumers. In the low-power trial of the larger ships the consumption was 2.6 lbs. and 2.1 lbs. per unit of power per hour, but undue importance should not be attached to the consumption at the "Diadem's" first trial, as, seeing that the expenditure on auxiliary machinery is practically unvarying, the lower the power the larger is the proportionate consumption of coal on other than the main engines. In the "Powerful" and "Terrible" there are six stokeholds and four funnels, so that it not infrequently happens that with one stokehold in use the engineer has to use what is virtually one funnel and a half, and it is obvious that with only half a funnel he fails to obtain the requisite draught for carrying the gases away. In the "Diadem," however, there are four stokeholds and four funnels, each stokehold thus having its own funnel—an arrangement whereby greater efficiency is obtained.

The "Diadem" left Portsmouth on Tuesday morning, the 18th ult., in clear weather, and, after swinging to adjust compasses, she started shortly before noon on her trial. She steamed as far eastward as Beachy Head and then turned, making a straight run westward to a point about twelve miles beyond Portland. She then turned so as to get on the measured mile in Stokes Bay by daylight the following morning, and there, with 3,200-H.P., she made four runs with the wind against tide. The first run was made in 5 minutes, the second in 4 minutes 23.4 seconds, the third in 5 minutes 2.2 seconds, and the fourth in 4 minutes 33.4 seconds. The mean of the four runs gave a speed of 12.74 knots. The ship then returned into the Channel to complete the trial, with the following results:—Draught of water forward, 26 feet 6 inches; aft, 26 feet 6 inches; steam in boilers, 265 lbs.; vacuum, 27.6 inches starboard and 26.6 inches port; revolutions, 67.2 both starboard and port; total I.H.P., 3,315. The speed by patent log was 12.64 knots, and the coal consumed was 2.18 lbs. per I.H.P. per hour.

The cruiser left Spithead again on Friday, the 21st ult., and completed the second of her series of trials, anchoring in the sound on Saturday night. These included anchor trials, voice-pipe trials, and a thirty hours' run at a specified minimum of 12,500-H.P. The anchor trials were carried out at Spithead, and the contract stipulated that the cable 12½ fathoms long should be hove in in three minutes, but the actual time occupied was 2 minutes 15 seconds. The voice-pipe trials were carried out at sea on Friday, when the ship was travelling at her stipulated H.P., and were satisfactory. All the ear-pieces leading to and from noisy stations are made of india-rubber, fitting tightly over the ear and completely excluding all external sounds. The principal exchange is situated at the fore end of the ammunition passage on the starboard side of the platform deck, and there is a second exchange at the after end of the same passage. The pipes to all the casemates are in connection with the fore exchange and with the receiver on the main deck. The pipes to the engine-room, however, are in direct connection with the conning tower on the bridge, while the two exchanges are also connected with each other. The ship having left Spithead soon after 9 o'clock on Friday morning, the engines worked up to the required H.P. by a quarter to 11, and a run was made as far as Beachy Head, where the ship was turned, and then she steamed to the westward as far as the Scilly Islands. On this run the vessel was for about twelve hours head to wind, the little smoke that issued from the funnels being in a direct line with the rudder, but the economisers worked with such success that there were neither sparks nor flame by night, while there was a marked absence of sooty dust and grit on the quarter-deck. The coal was carefully weighed, and steam was maintained with ease throughout the trial. At her

coal consumption trial at four-fifths her power the "Terrible" showed a result of 1·71 lbs. per unit of power per hour, and the "Powerful" gave a result of 1·83 lbs.; the consumption in the "Diadem," however, was 1·59 lbs., thus showing a saving of 10 per cent. This result is the most favourable that has yet been achieved in an English war-ship on a protracted trial. It may be mentioned that, though the trial is for thirty hours, in all cases the results are collated from a consecutive twenty-four hours selected from the thirty. So abundant was the steam that while the stokeholds were under natural draught, the fans not having been moved during the trial, and the ashpit dampers were frequently closed, it was apparent that steam was occasionally blowing off from the waste-steam pipe. The atmosphere in the engine-room was cool, and in the stokehold it did not exceed 90°. As soon as the weather was sufficiently clear on Saturday morning the vessel began her three runs over the 23 miles measured distance between Rame Head and Dodman Point, on the Cornish coast, and the mean of the three runs gave her a speed of 19·79 knots, or half a knot in excess of anticipations. The draught of water forward was 24 feet 4 inches, and aft 26 feet 5 inches; the steam in boilers was 280 lbs., and the vacuum 27 inches starboard and 26½ inches port; the revolutions per minute were 107·8 starboard, and 107·4 port; the collective I.H.P. was 12,776, and, while the power did not greatly fluctuate, the hourly reports showed that the coal consumption was practically even hour by hour.

She concluded her contractors' official trials on the 26th ult., anchoring at Spithead shortly before 10 p.m. She left Plymouth at 8 o'clock on the previous morning, and steamed at once for Dodman Point, working up to her full power of 16,500-H.P. Before reaching that limit of the 23 miles course she made three runs over the distance, being required to attain a speed of 20½ knots. On the first run the speed was 20·72 knots, on the second 20·73, and on the third 20·2, giving a mean on the three runs of 20·6, or a point in advance of the official calculation. On the first and second runs there was not enough tide to influence the speed, but on the third run the tide was against the ship. After completing the three runs the "Diadem" continued her eight hours' trial, which was concluded when off Portland, and the vessel finished her run to Spithead at a speed of 18 knots. Throughout the day the engines were so admirably balanced that nothing but the faintest tremor of vibration was communicated to the hull, and this was felt when the engines were making from 110 to 112 revolutions, but beyond that point the tremor vanished. There was no air-pressure in the stokeholds, which were open all the time of the trial, but the fans were running gently for the purpose of ventilation. The starting platforms were remarkably cool, and there was no such high temperature below as to cause any inconvenience. A very regular speed of the engines was maintained during the eight hours, and the wave formation at the bow and stern was moderate in character.

Although it is not customary to take the coal consumption at full-power trials, the rule was waived in this case in order to obtain information for future guidance, and it was ascertained that the consumption was the exceedingly low average of 1·77 lbs. per unit of power per hour, thus showing not merely a very high efficiency, but far better results than have ever been obtained from boilers of the ordinary marine type. While the results were obtained with open stokeholds and natural draught, the advantages of the economisers were as clearly demonstrated as in the previous trial at four-fifths the full power, as there was practically an absence of unconsumed gases and there was no appearance of flame, ashes, or coal-dust issuing from the funnels. The draught of water forward was 24 feet 4 inches and aft 26 feet 4 inches, and the steam in boilers was 291 lbs; the vacuum was 27 inches starboard and 26½ inches port, while the revolutions were 119·3 starboard and 118·9 port; the total I.H.P. was 8,888 starboard and 8,300 port, giving a collective I.H.P. of 7,188.—*The Times*.



## THE CRUISER "ARGONAUT."

The first-class cruiser "Argonaut" was launched from the yard of the Fairfield Shipbuilding Company on the Clyde, on the 24th ult. The christening ceremony was performed by the Countess of Hopetoun.

The "Argonaut" is a protected cruiser, one of the last four of this class laid down for the British Admiralty. Of the other three, one, the "Spartiate," is being built at Pembroke Dockyard; the remaining two—the "Amphitrite" and "Ariadne"—are under construction at Barrow and Clydebank respectively. The dimensions of the vessel are:—Length over all, 462 feet 6 inches; length between perpendiculars, 435 feet; beam (extreme), 69 feet; displacement, 11,000 tons. The hull is generally of Siemens-Martin steel, and the construction is that usually adopted by the Admiralty. There is a double bottom extending the full length of the machinery and boiler spaces, and fore and aft of these limits the steel water-tight magazines, etc., practically continue the double bottom right to the ends of the vessel. The coal capacity at normal draught is 1,000 tons, but provision has been made for carrying about twice that quantity should the necessity arise. The hull is sub-divided into a very large number of water-tight compartments by longitudinal and transverse water-tight bulkheads. Openings have been cut in these bulkheads only where it is absolutely necessary, and in such cases water-tight doors of approved pattern are fitted, all arranged to work both at the doors and by gearing from the main deck. The stem, stern-post, and shaft brackets are of phosphor-bronze, as is usual in sheathed vessels. The stem is of the ordinary ram form, and is strongly supported by the framework of the vessel. The hull, below and up to about 6 feet above the load water-line, is sheathed with teak planking and covered with copper sheets. Bilge keels are also fitted for about 210 feet amidships. The protective deck, of a curved form in section, ranges in thickness from  $2\frac{1}{2}$  inches to 4 inches, and covers the whole of the machinery, boilers, and magazines. A conning tower formed of Harveyized steel is placed forward and fitted with all the necessary apparatus for controlling the vessel and directing operations while in action. The connections from the steering standards, etc., in the conning tower are all protected by a thick steel tube extending down to the protective deck. Navigating bridges are arranged both forward and aft, the after one being raised sufficiently high to secure a view over all the other deck fittings.

The armament of the vessel will consist of sixteen of the new 45-calibre long 6-inch Q.F. guns, two aft on the upper deck and two on the fore-castle protected by shields; the remaining twelve being mounted in armoured casemates of Harveyized steel, eight on the main deck and four on the upper deck; fourteen 12-pounder Q.F. and twelve 3-pounder Q.F. guns. She will also have two torpedo-tubes discharging below water forward. The magazines and shell rooms for stowing ammunition are of large capacity, and are conveniently situated for working the Q.F. guns, special gear being supplied for manipulating the ammunition. She will be rigged with two masts, each fitted with a platform for operating electric search-lights. An installation of electric light is fitted in all parts of the vessel, and includes six projectors.

The propelling machinery of the "Argonaut" will consist of two sets of triple-expansion engines fitted in two water-tight compartments; each set will have four inverted cylinders working on four cranks. Each of the propellers has a boss of gun-metal fitted with three adjustable blades of manganese-bronze, constructed to work inwards. The condensing water is supplied by four centrifugal pumps fitted with independent engines. The auxiliary condensers, one in each engine-room, are of cast brass, with separate centrifugal pumps and engines. The feed, fire, and bilge, and hot-well pumps are all separate from and independent of the main engines, the feed pumps being arranged in the boiler-room, the others in the engine-room. Steam will be supplied by thirty water-tube boilers and economisers of the latest Belleville type. The boilers are arranged in

four groups, each group fitted in a water-tight compartment. They are designed to work at 300 lbs. pressure, reducing valves being fitted to reduce the steam pressure to 250 lbs. at the engines. There are four funnels, one to each stokehold and group of boilers. Air-compressing steam engines are in each stokehold to supply air to the furnaces, and the necessary air will be delivered by eight large fans. Fans will also be fitted for engine-room and ship ventilation. It is expected that with the 18,000-I.H.P. provided the vessel will attain a speed of 20½ knots under ordinary conditions.—*The Times*.

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GENERAL

The war-ships, exclusive of torpedo-boats, launched during the year 1896 for the various Navies, with their tonnage, I.H.P., and estimated speed were as follows:—

*Great Britain*.—First-class battle-ship:—"Canopus," 12,950 tons, 13,500-I.H.P., and 18 knots speed. First-class cruisers:—"Andromeda," "Europa," "Niobe," all of 11,000 tons, 16,500-I.H.P., and 20·5 knots speed. Second-class cruiser:—"Vindictive," 5,800 tons, 10,000-I.H.P., and 19·5 knots speed. Third-class cruisers:—"Pactolus," "Perseus," "Pomone," "Pegasus," "Pyramus," all of 2,200 tons, 7,000-I.H.P., and 20 knots speed. River gun-boats:—"Heron," "Jackdaw," "Nightingale," "Sandpiper," 82 tons, and 9 knots speed. Torpedo-boat destroyers:—"Ariel," "Cheerful," "Fairy," "Fawn," "Flirt," "Flying Fish," "Gypsy," "Leopard," "Osprey," "Panther," "Seal," "Sylvia," "Wolf," all of 300 tons, 6,000-I.H.P., and 30 knots speed.

*Argentine Republic*.—Training-ship:—"Presidente Sarmiento," 2,352 tons, 2,000-I.H.P., and 13 knots speed.

*Austria-Hungary*.—Torpedo-cruiser:—"Zenta," 2,300 tons, 5,000-I.H.P., and 20 knots speed.

*Brazil*.—Double-turret monitor:—"Vinte e Quatro de Maio," 5,000 tons, 6,000-I.H.P., and 15 knots speed (originally launched in 1885), has now been rebuilt.

*Chili*.—First-class armoured-cruiser:—"General O. Higgins," 8,500 tons, 16,000-I.H.P., and 21 knots speed.

*China*.—First-class cruiser:—"Hai-Tien," 4,300 tons, 17,000-I.H.P., and 24 knots speed. Second-class cruiser:—"Hai-Yong," 2,950 tons, 8,000-I.H.P., and 19 knots speed. Torpedo-cruiser:—"Feiting," 1,000 tons, 2,400-I.H.P., and 24 knots speed.

*France*.—First-class cruiser:—"Guichen," 8,277 tons, 23,670-I.H.P., and 23 knots speed. Third-class cruisers:—"Lavoisier," 2,317 tons, 6,400-I.H.P., and 20 knots speed; "D'Estrées," 2,452 tons, 8,500-I.H.P., and 20 knots speed. Torpedo-avisos:—"Dunois," 896 tons, 6,800-I.H.P., and 23 knots speed. Despatch-boat:—"Kersaint," 1,243 tons, 2,200-I.H.P., and 15 knots speed.

*Germany*.—First-class battle-ship:—"Kaiser Wilhelm II.," 11,180 tons, 13,000-I.H.P., and 18 knots speed. First-class armoured-cruiser:—"Fürst Bismarck," 10,650 tons, 19,000-I.H.P., and 19 knots speed. Second-class cruisers:—"Freya," "Hertha," "Victoria Louise," all of 5,700 tons, 10,000-I.H.P., and 18 knots speed.

*Italy*.—First-class battle-ships:—"Ammiraglio di Saint Bon," "Emanuele Filiberto," both of 9,800 tons, 13,500-I.H.P., and 18 knots speed. First-class armoured-cruisers:—"Giuseppe Garibaldi," "Varese," both of 6,840 tons and 13,000-I.H.P., and 20 knots speed.

*Japan*.—Second-class cruiser:—"Takasago," 4,150 tons, 15,500-I.H.P., and 22 knots speed.

*The Netherlands*.—Second-class cruiser:—"Zeeland," 3,900 tons, 9,250-I.H.P., and 20 knots speed.

*Norway*.—Third-class battle-ships: "Harald Haarfagre," "Tordenskjold," both of 3,400 tons, 4,800-I.H.P., and 16 knots speed.

*Russia*.—No large ships, but seven Torpedo-boat Destroyers of the "Sokol" type, viz., 240 tons, 4,500-I.H.P., and 29.5 knots speed.

*Spain*.—First-class armoured cruiser:—"Cardinal Cisneros," 7,000 tons, 15,000-I.H.P., and 20 knots speed. Third-class cruisers:—"Marqués de la Victoria," "Don Alvaro de Bazan," both of 823 tons, 4,600-I.H.P., and 19 knots speed. Torpedo-boat Destroyers:—"Audaz," "Osado," "Pluton," all of 400 tons, 6,000-I.H.P., and 30 knots speed.

*United States*.—First-class gun-boats:—"Wheeling," "Marietta," "Princeton," all of 1,000 tons, 800-I.H.P., and 13 knots speed.

**DENMARK**.—The Naval Ordinary Estimates for 1898-99 amount to 6,936,922 kronen (£346,900), and the Extraordinary to 646,500 kronen (£32,330), representing an increase of 217,132 kronen to the Ordinary, and 70,000 kronen to the Extraordinary, over the amounts voted last year. A sum of 1,200,000 kronen (£60,000) is to be expended on ship-building, which is to be devoted to the construction of the battle-ship "Herluf Trolle"; for the maintenance of the ships and vessels of the fleet a vote of 742,300 kronen is demanded; and for ships in commission 800,000 kronen.

The Evolutionary Squadron is to be commissioned for seven weeks, and will consist of the following vessels:—

Battle-ship—"Odin" (flag-ship).

Coast-defence monitor—"Skjold."

Gun-boats—"Moen," "Store Belt," "Öresund," and "Grönsund"; with sixteen second-class torpedo-boats and some picket-boats.

The squadron is to be under the command of Rear-Admiral Uldall. At the conclusion of the manœuvres the "Odin" and "Skjold" will remain in commission a further two months for training purposes. The corvette "Dagmar," with the third-class cruiser "Absalon," will be in commission—the first for three months, and the latter for one month—as cadet training-ships, the last-named being employed for a further three weeks as gunnery training-ship; the third-class cruiser "Ingolf" will commission for fifteen weeks as training-ship for petty officers; the gun-boat "Falster" for two months as training-ship for engineers, and for a further three months as training-ship for the pupils of the Naval Construction and Engineering School; the third-class cruiser "Heimdall" commissions for seven and a half months for fishery protection duties off Iceland and the Faroe Islands; the cruising frigate "Fyen," to the command of which Prince Waldemar of Denmark has been appointed, commissions for a nine months' foreign cruise, extending, as at present arranged, to Siam; the gun-boats "Grönsand" and "Guldborgsund" commission seven and a half and two months respectively for fishery protection duties off Skager.

Out of the Extraordinary Estimates, 42,000 kronen are devoted to the repairs of the battle-ship "Odin," and a new armament of B.L. guns is to be substituted for her present M.L. guns at a further cost of 62,000 kronen; for the conversion of the condemned cruiser "Fylla" into a depôt and barrack-ship for torpedo-boats, 12,000 kronen are proposed; for booms as defence against torpedo-boats at Copenhagen, 18,000 kronen; to provide ammunition and stores for the "Herluf Trolle," 180,000 kronen, and for necessary repairs in the dock-yards to plant, etc., 30,000 kronen.—*Neue Preussische Kreuz-Zeitung*.

**FRANCE**.—The following are the principal promotions and appointments which have been made: Rear-Admiral—A. E. M. De Penfentenyo de Kervéreguin to command of 2nd Division of Squadron of the North. Capitaines de vaisseau—P. J. Daniel to "Jauréguiberry"; L. A. Massenet to "Foudre"; J. A.

De Surgy to "Bouvines"; H. A. Bontet to "Vauban." Capitaines de frégate—H. I. M. Gaultier to command of Stationary Defences at Brest; Le Pelletier des Ravinières to command of *Défense Mobile* at Brest; A. Leudet-Delavallée to "Héroïne" for command of flotilla in Senegal; A. M. De Fésigny to "Papin"; C. A. Saint-Paul de Sainçay, F. E. Richard-Foy, M. C. Aubert, and V. M. Rossel to be Capitaines de vaisseau.—*Le Moniteur de la Flotte*.

Rear-Admiral De Penfentenyo de Kervéréguin, who has been selected to succeed Rear-Admiral the Marquis de Courthille, in command of the 2nd Division of the Squadron of the North, has selected Capitaine de frégate L. J. Pivot as his chief of the staff, and he will hoist his flag on board the coast-defence battle-ship "Bouvines" at Cherbourg on the 10th inst.

Further reinforcements are being sent to China, and the squadron is to be placed under the command of a vice-admiral, who is to hoist his flag on board the cuirassé de croisière "Vauban," which was commissioned on the 24th ult. and is now fitting out at Toulon. Rear-Admiral De la Bonninière de Beaumont is the officer selected. He attains his vice-admiral's rank on the 6th prox., when Vice-Admiral Rieunier retires. The new commander-in-chief has had considerable experience in China, having as a captain commanded the naval force in Tonquin and as rear-admiral the squadron during the Chino-Japanese war, 1894-95. His chief of the staff is to be Capitaine de vaisseau Bonifay, who acted in the same capacity to the Admiral, when previously in command in the East. Rear-Admiral Bédollière, now in command on the station, will remain as second in command, with his flag in the "Bayard." The "Vauban" is a small battle-ship of 6,150 tons, laid down in 1881 and launched in 1883, protected by a 10-inch water-line belt, with a 2-inch armoured deck; her four barbettes having 8-inch armour. Her armament consists of four 24-centimetre (9·4-inch) guns mounted in the barbettes, one forward, one aft, and one on each beam; one 15·4-centimetre (6·3-inch) Q.F. gun, six 13·8-centimetre (5·5-inch) Q.F. guns with twelve machine guns. The great fault of the ship is her want of speed; she originally was credited with a speed of 14·5 knots, but it is doubtful if she can be depended upon to do more than 13 now. In addition to the "Vauban," the first-class armoured-cruiser "Bruix," commissioned on the 24th ult. at Cherbourg, is also to proceed to China, while the second-class cruiser "Duguay-Trouin," the senior officer's ship in the Pacific has also received orders to proceed to the same station. The squadron in Eastern waters will now consist of the following ships:—

Cuirassés de croisière — "Vauban" (flag-ship of commander-in-chief),

"Bayard" (flag-ship of Rear-Admiral Bédollière).

First-class armoured cruiser—"Bruix."

First-class cruiser—"Jean Bart."

Second-class cruisers—"Pascal," "Descartes," and "Duguay-Trouin."

Third-class cruiser—"Éclaireur."

Gun-boats—"Lion" and "Surprise."

Of these vessels it should be noted that the "Duguay-Trouin" was launched in 1877 and the "Éclaireur" in 1874, the latter being built of wood, and that the "Bayard" also is only a wooden ship armour-plated.

The Minister of Marine has ordered the hastening of the construction of the following vessels:—

At Cherbourg the new second-class cruisers "Cassard" and "Du Chayla" were to be ready by the end of January to leave for the Mediterranean, and the battle-ship "Henri IV." is to be finished in 1899 instead of 1900, and to do this more workmen have had to be taken on.

At Brest the alterations in the "Amiral-Baudin" are being pressed forward with all possible speed, so that this vessel may be ready by the end of June at the latest, and the cruisers "Isly" and "Sfax" are to be ready by the end of March and July respectively.

The first-class armoured cruiser "Dupuy de Lôme" has been thoroughly refitted at Brest and provided with bilge keels. The new first-class battle-ship "Masséna" had a satisfactory trial of her machinery off Brest on 27th January, 14,200-H.P. being obtained; the weather was foggy, and the landmarks not being visible the speed was not determined. The keel plates of the battle-ship "Jéna" have just been laid at Brest, though the orders to commence this vessel were given on the 3rd August last, a period of nine months having been occupied in preparing the plans and other technical operations. On this subject the *Temps* remarks:—"That though the "Gaulois" battle-ship was only actually nine months building on the stocks, while her sister, the "Charlemagne," was fifteen months, giving a gain of six months to the former, still the orders to commence these two vessels were given on 22nd January, 1895, and the 30th September, 1893, and they were launched the 6th October, 1896, and the 17th October, 1895, respectively, showing a real gain of time of only four months in favour of the "Gaulois." "What we wish to learn," continues the *Temps*, "is not the time occupied in actual building, but the whole period necessary before a new addition can be made to the fleet from the date that the orders are first given to the day the vessel is ready for commission."

During torpedo exercises off Hyères on the 19th January the torpilleur-de-haute-mer "Forban," going at a speed of 14 knots, collided with and seriously injured the "Éclair," another torpedo-boat of an older type, which latter was able to reach Toulon with some difficulty, where she is now under repair.

The torpedo depot-ship "Foudre," attached to the Mediterranean fleet, has been exercised in hoisting out and in her torpedo-boats:—"On the evening of 19th January a signal was made to the "Foudre" to hoist out torpedo-boats "A" and "B," and send them to support a night attack made by the torpedo-boats attached to the fleet. In less than twenty minutes these two boats, 61 feet long, were hoisted out and despatched with steam up and position lights burning. At the conclusion of the exercise they were hoisted in again in an equally satisfactory manner; the weather, however, is stated to have been very calm and fine; and to arrive at a satisfactory conclusion as to the value of the hoisting apparatus, the exercise should be repeated under more unfavourable conditions.

The *Mobile Défense* of Corsica has been augmented by four torpedo-boats; and the question of constituting Ajaccio a separate command of the *Mobile Défense* under a capitaine de frégate is under consideration.

More than 1,400 "inscrits" arrived at Brest on the 1st January for their twenty-eight days' training; and they were embarked in the "Hôche," "Valmy," "Dupuy de Lôme," and "Friant." On the conclusion of their period of drill, Vice-Admiral Barrera, commanding the Northern Squadron, issued an order of the day, complimenting the men on their smartness and efficiency, and on the ease with which they had settled down again to their old work and life.

A ministerial decree concerning the officers of the Reserve has been published, of which the following are the chief points:—When called out for service they will preferably receive employment on shore, but in cases of necessity they can be called upon to serve at sea. Engineers of the Reserve are only to be employed at sea when there are not a sufficient number of engineers on the Active List. Officers commanding mercantile steamers requisitioned for service with the fleet will continue in command of their vessels, and the other officers and engineers of those steamers are only to be employed on board their own ships.

By regulation the officers of the Reserve are called out for four weeks' training every alternate year, but those who have given proof of a complete knowledge of their drill can be excused for a whole or a part of their periodical training.

A general inspection of the Reserve officers will take place in the last quarter of each year, and they will present themselves as follows:—



1. At the Ministry of Marine; those residing in the departments of the Seine, Seine et Oise, and Seine et Marne.
2. At the chief town of a maritime arrondissement; those who reside in a department having a maritime prefect.
3. At the prefecture of the department in which they reside in all other cases.

Reserve officers are to wear their uniform when up for training and at all official ceremonies, including balls, dinners, and soirées, given by public functionaries. For any other occasion permission to wear the uniform must be obtained.

A new method of preserving boilers not in use has been prescribed for the French Navy. The boilers are to be completely filled with fresh water, and in the case of large boilers with large tubes there is added to the water a certain amount of milk of lime or a solution of soda; in the case of tubular boilers with small tubes milk of lime or soda is added, the solution, however, not being so strong as for the larger tubes, in order to avoid any danger of contracting the effective area by deposit from the solution. The strength of the solution is to be just sufficient to neutralise any acidity of the water. Care is enjoined to be taken to preserve the outside of the steel or iron tubes in those boilers which are not to be used for long periods. Such are for this purpose painted with red lead or coal-tar as far as it is possible to reach, while for those portions which are inaccessible a protective coating is obtained by burning under the tubes a certain amount of tar or coal-tar, the smoke of these forming a coating of soot, which prevents the air from reaching the surface of the tubes. Besides this treatment the boiler casing is closed and kept air-tight, after some quicklime has been placed inside. Periodical inspections of these boilers are made to ensure the complete filling of the tubes.—*Le Temps, Le Yacht, and Les Tablettes des deux Charentes.*

ITALY.—The Naval Estimates for 1898-99 amount to 105,963,646 lire, but as some deductions have to be made, the real total is 94,769,124 lire, of which 24 millions and a half are devoted to the *personnel* and 19,500,000 lire to new constructions and completing during the current year the following ships:—

First-class battle-ships—"Emanuele Filiberto," completing at Naples, and "Ammiraglio di Saint Bon" at Venice.

First-class armoured cruisers—"Vettor Pisani," completing at Naples;

"Giuseppe Garibaldi," completing at the Ansaldo Works, Sestri Ponente;

"Varese," completing at the Orlando Yard at Leghorn.

Second-class ram-cruiser—"Puglia," fitting out at the dockyard at Taranto.

Torpedo-cruisers—"Agordat" and "Ciotat," building at Naples and Castellamare respectively.

At Castellamare a new torpedo-cruiser of the "Agordat" type is to be laid down, besides some torpedo-boat destroyers and torpedo-boats, but with regard to the proposed new battle-ships no decision as to their type would appear to have been yet arrived at, although it is stated that four are to be laid down. By the end of the financial year, 1st July, 1899, the active fleet will consist of 320 vessels of all classes, 51 of which will be battle-ships and cruisers and 146 torpedo-boats.

Rear-Admiral Candiani has been appointed to the command of a new squadron for service in trans-Atlantic waters, which is to be constituted as follows:—

First-class armoured cruiser—"Carlo Alberto" (flag-ship).

Third-class cruisers—"Calabria" and "Umbria."

Despatch-vessel—"Staffetta."

The first-class battle-ship "Duilio" is at present in the dockyard hands at Spezia, where she is being completely renovated, in the manner adopted for her sister-ship, the "Dandolo." She is receiving new engines and boilers, which are

expected to give her a speed of 18 knots; four 10-inch B.L. Armstrong guns of the latest type are to be substituted for the four 100-ton muzzle-loaders previously mounted in her turrets, and her secondary battery is to consist of seven 6-inch Q.F. and five 4.7-inch Q.F. guns, instead of the three 4.7-inch Q.F. guns, which were all she carried formerly, with twenty-six smaller Q.F. and machine guns. The first-class battle-ships "Italia," "Andrea Dorea," and "Francesco Morosini," all require new boilers, and it is contemplated to substitute water-tube boilers in all these ships for the cylindrical ones at present on board, although the new battle-ships "Emanuele Filiberto," "Ammiraglio di Saint Bon," and the armoured-cruisers "Vettor Pisani," and "Carlo Alberto," now under construction, are receiving the old type of boiler, while the sister-ship to the last-named, the "Varese" is to have water-tube boilers. The torpedo-cruiser "Tripoli" is being fitted with the Schichau water-tube boilers, while the "Minerva," "Agordat," and "Ciotat," of the same class, with the new torpedo-boat destroyers building at Odero, are to have the Blechynden type of boiler.

An instalment of the Marconi system of wireless telegraphy is to be fitted to all ships, and all officers are to be instructed in the new method of telegraphy.

The following is the present constitution of the different squadrons:—

Active Squadron, under the command of Vice-Admiral N. Canevaro—

First-class battle-ships—"Sicilia" (flag-ship of Commander-in-Chief),

Sardegna" (flag-ship of Rear-Admiral L. Palumbo).

Second-class cruiser—"Stromboli."

Third-class cruiser—"Etruria."

Torpedo-cruiser—"Aretusa."

Reserve Squadron, under command of Vice-Admiral C. Morin—

First-class battle-ships—"Lepanto" (flag-ship of Commander-in-Chief),

"Francesco di Morosini" (flag-ship of Rear-Admiral G. B. Mirabello),

"Ruggiero di Lauria."

Second class cruiser—"Fieramosca."

Third-class cruisers—"Lombardia" and "Dogali."

Torpedo-cruisers—"Calatafimi" and "Goito."

#### *Red Sea and Indian Ocean.*

Spar-decked corvette—"Cristoforo Colombo."

First-class gun-boats—"Governolo," "Provana," and "Veniero."

#### *Coast of America.*

Third-class cruisers—"Umbria" and "Calabria."

#### *Constantinople.*

Avisos—"Mestre" and "Galileo."

The torpedo-boat reserve flotillas are stationed as follows:—

<i>Spezia</i>	...	1st	Division—Nos. 70, 81, 87, 97, 60, 71, 88, and 115.
"	...	2nd	" —Nos. 62, 84, 74, 63, 85, and 93.
"	...	3rd	" —Nos. 89, 72, 69, 94, 95, and 98.
"	...	4th	" —Nos. 83, 100, 50, 99, 51, 56, 91, and 139.
"	...	5th	" —Nos. 82, 80, 29, 67, 49, 38, 124, and 125.
<i>Maddalena</i>	...	1st	Division—Nos. 75, 145, 117, 68, 119, and 153.
"	...	2nd	" —Nos. 66, 151, 135, 131, and 65.
<i>Taranto</i>	...	1st	Division—Nos. 105, 118, 121, 102, 133, and 137.
"	...	2nd	" —Nos. 148, 127, 146, 106, and 141.
<i>Venice</i>	...	...	—Nos. 149, 129, 138, 128, and 136.
<i>Gaeta</i>	...	...	—Nos. 150, 143, 110, and 123.
<i>Messina</i>	...	...	—Nos. 16, 113, 122, 132, and 90.
<i>Naples</i>	...	...	—Nos. 111, 142, 120, and 140.

*Torpedo-boats in Disponibilità.*

<i>Spezia</i>	...	Group I.—"Nibbio," "Avvoltoio," "Aquila," "Falco," "32," and "36."
<i>Venice</i>	...	Group II.—Nos. 23 and 24.
<i>Maddalena</i>	...	Group III.—Nos. 18, 24, 44, 45, 46, 52, 53, and 58.
<i>Taranta</i>	...	Group IV.—Nos. 26, 27, 33, 39, 42, 43, 47, 48, 55, 59, and 64.
<i>Naples</i>	...	Group V.—Nos. 28, 40, 41, 54, 92, 116, 114, and 139.

—*Rivista Marittima*, *Mittheilungen aus dem Gebiete des Seewesens*, and *Les Tablettes des deux Charentes*.

The following account of the Italian Naval Manœuvres is taken from the *Italia Marinara* :—

"As the naval mobilisation for coast defence has now commenced, we publish the official bulletin of the manœuvres as usual, reserving an examination of the results till the termination of the operations. During the night of the 14th November, at 11.15, the guns of Spezia gave the alarm, and the mobilisation immediately commenced. The Minister of Marine (Admiral Brin) was present at the operations directed by Admirals Morin, Magnaghi, Candiani, and Farnia; whilst Admiral H.R.H. the Duke of Genoa, with his flag on board the "Savoia," assumed the command of the mobilised forces. On the morning of the 15th the Duke inspected the various batteries in the Gulf; the gun practice of the armoured fort at the island of Palmaria was highly successful, in spite of the fog which prevailed. During the night of the 15th, experiments of a secret character were carried out, which were also highly successful. On the 17th the squadron, disposed in two divisions, one consisting of the battle-ships "Lepanto," "Lauria," and "Duilio," with the cruisers "Dogali" and "Calatafimi"; the other of the battle-ship "Italia," with the cruisers "Fieramosca," "Monzambano," and the "Goito," left the Gulf and proceeded to sea, their destination being unknown. The "Savoia," with the Duke of Genoa on board, inspected the various fortifications of the district around Genoa. The squadron, on the night of the 17th, between 2 and 3 a.m., by landing parties at Monterosso and Levanto in conjunction with a brisk cannonade, attempted the destruction of the railway. The troops of the coast defence were on the alert, and replied energetically with rifle fire. At 11.30 p.m. the garrison was ordered to send a reinforcement of men, which was done; the operations were most successful. On the morning of the 16th two companies of the coast-defence corps arrived by railway at Viareggio from Pisa; the 6th were extended along the littoral with the special object of securing the railway; the 7th remained at Viareggio in reserve for any emergency. Look-out posts and signal stations completed the already organised semaphore service for communication between the littoral and the interior. Riflemen, coastguard, and mobilised seamen formed the mobile defence. Two secondary batteries, one with 12-centimetre and the other with 15.2-centimetre guns, defended the coast between Bufalina and Livorno. Between Viareggio and Spezia the railway was occupied by the military authorities. Numerous patrols watched the line, important posts being established at the stations. The battle-ships "Italia," "Lepanto," "Lauria," "Duilio," with the cruisers "Fieramosca," "Monzambano," "Goito," "Dogali," and "Calatafimi," left Sestri Levante on the 18th to cruise along the littoral. The "Savoia" left Genoa on the 19th. Gun practice by the coast defence was commenced with the best results both in volley firing and single gun practice, against an old ship as a target, which was reduced to fragments. The practice was carried out by the forts of Palmaria, the Schenello battery, and the armoured turret "Umberto." The Palmaria fort, garrisoned by the 16th Company, fired two volleys with great effect; the Schenello battery, garrisoned by the Navy under Lieutenant Dondero, fired two volleys with 14.9-centimetre guns also with equal effect. The armoured turret "Umberto," with the 21st Company, under Captain Catitti and Lieutenants Grotti and Gucci, also fired two shots from the 40-centimetre guns very successfully. In the evening the

obstruction defences were illuminated, and the old ship which attempted to cross them was destroyed by gun-fire. All the semaphore service of the three seas as far as Venice was in constant request, and the correspondence by night between the various stations was carried on without interruption. On the night of the 19th, at Spezia, there was a false alarm along the coast. The fishing-boats, which were in the offing in considerable numbers, were furnished with an unusual number of lights to avoid the risk of being run into by torpedo-boats. The coast defence, thinking a new attack was threatened, raised the alarm; the mistake, however, was soon discovered, and it served at any rate to show the defenders were on the look out. In the afternoon of the 21st the "Lepanto" and "Calatafimi" were signalled, followed by two torpedo-boats. A coast-defence company, the 10th, under the orders of Captain Gordano, was detached to prevent a landing. About 5.0 p.m., after a brilliant evolution, about 300 sailors landed near Ferraccio, under the orders of Commander Di Castro. After the sailors had formed for the attack on the railway, the operations were stopped and the men were reviewed by the Duke of Genoa. At Ancona the coast defence was most active; every evening coloured rays were thrown out from the Cappuccini fort, being signals between the semaphore and the one at Monte Conero. Signals were also exchanged with torpedo-boat No. "61 S" and with the port station under Lieutenant Ruccellai Cosimo, and with No. "129 S," commanded by Lieutenant Sicardi, which arrived at Ancona on 21st. At the end of the mole an electric light projector was installed, under the direction of a chief torpedo-man and three electricians, and a beam was thrown for ten minutes every evening along the coast and over the sea. Torpedo-boat "129 S" surprised the semaphores of Tremiti, Viesti, and Torre Mileto, approaching at night and making signals suddenly, which were immediately responded to by the signal stations. The captains of the ports were responsible for the duties which related to the organisation of the auxiliary fleet, of the mercantile steam and sailing ships, and of the existing resources of the port which might be requisitioned in case of need for provisioning and arming the ships of the squadron; also for the rapid mobilisation of the *personnel* in the four classes, 1869, 1870, 1871, and 1872, forming the staff of the various signal stations. The port captain at Genoa, wrongly interpreting the orders, had sent the quarter-master or pilot staff to Spezia as well as the signal staff, but the former were soon sent back. There was no other incident to note. From 23rd to the 25th the squadron lay at anchor at Porto-Ferraio, operations being resumed in the afternoon of the 25th. Ships were signalled in the waters of Viareggio, and the coast-defence troops, continually in motion, were found at every point where their services could be needed. All the landing operations as yet attempted by the fleet have been successful in spite of the valuable services of the signal staff and the promptitude of the defence. On the 27th there were brilliant naval operations in the waters of Maddalena, after which the "Savoia," with the Duke, entered the estuary followed by the "Lepanto," "Lauria," "Monzambano," "Etruria," and "Dogali." On the 29th the Duke of Genoa returned from Guardiacvecchia with Admirals Quigini-Puliga and Bettilo, and General Prielli reviewed the land and sea troops on the Piazza Umberto. A minute inspection into the condition and efficiency of the defence at Maddalena continued till the 2nd December. The Duke, after the inspection, complimented the authorities on the good order in which he found the defences, and the comfortable conditions and good instruction of the men. On the 3rd December the "Savoia" arrived at Naples, and the Duke of Genoa disembarked; accompanied by his staff, and Admiral Gonsalez commanding the department and Grenet director of the arsenal, he inspected the arsenal, the naval troops, and naval hospital, and expressed perfect satisfaction with the whole, especially commending the good order and organisation of the Hospital. On the 3rd the squadron left Naples for Messina for manœuvres in the Straits. The "Savoia" to remain till the 5th, when

she proceeded to Messina, arriving there with the Admiral on the 7th, as also the "Calatafini" with the Vice-Admiral Morin and the "Goito," the latter ships leaving again to join the squadron at Milazzo. All the forts of the Straits were reinforced by artillery, and by additional troops on the coast. H.R.H. inspected the fortress and the Campo Inglese on the 8th. On the same day, soon after 2 a.m., the squadron left Milazzo for the Straits, and at 3.30 operations commenced between the squadron attempting to force the Straits, and the forts of Calabria and Sicilia defending them. The eleven ships of the squadron encountered a lively resistance from the forts, the firing lasting an hour and a half, when the ships neared the Calabria coast and proceeded for Ionio. The electric light projectors were used during the engagement. During the night the fleet appeared again and the fire of the forts recommenced, offering an imposing spectacle at which a great number of the authorities of the port assisted. The Straits were illuminated by electric light, the plan of operations being as follows:—"The squadron will attempt to force the Straits at full speed to reach the port or continue their route, the forts to hinder the movements of the fleet if possible. The operations will show how many shots can be delivered from the forts in a given period of time on an enemy's fleet attempting to force the Straits. If the fire from the forts is considered by the judges sufficiently heavy and well directed to cause serious injury to the ships, they will return at night and attempt to take the forts by a *coup-de-main*. If the fire is not considered sufficiently heavy or well directed to cause serious damage to the fleet, the ships will proceed for their destination." On the 9th the Reserve Squadron under Vice-Admiral Morin left for Gaeta, and the "Savoia" with the Duke for Taranto. On the 11th and 12th the arsenal and forts of Taranto were inspected by H.R.H., the firing of a gun from the fort afterwards signalling the return to peace conditions. On the 15th the forts and the arsenal at Venice were similarly inspected, the inspection extended also to Chioggia and other advanced ports. On the 18th the mobilising experiment was completed, and in the evening H.R.H. the Commander-in-Chief struck his flag on the "Savoia," and landed with the chief of the staff, Rear-Admiral Bettolo, Captain Galleani of "S. Ambrogio," and the other members of the staff. The other officers of the Army and Navy embarked especially for the manœuvres also left the ship.

The following remarks on the manœuvres appeared in the same paper on 2nd January, 1898:—

For the naval exercises of previous years has been substituted an experiment in mobilisation. Now, without wishing to penetrate into official secrets, we wish to ask what result on the whole has been obtained, what useful information has been gained, and what is the expense incurred? We know that competent and well-intentioned persons are much occupied in their minds that the Navy may be ready for any event, and we know also that they struggle against many difficulties, not the least of which is the financial straits in which we are placed. We allow that a good administrator might find it necessary to conceal some things, in order that the prestige of the institutions might not suffer; but admitting all these extenuating circumstances, we still cannot comprehend the absolute silence with which we are met every time the occasion for rendering up the account after the manœuvres comes round. If it is desired that the inhabitants of this peninsula should be convinced of the necessity for providing for the defences of the country and her commerce at all costs, then these institutions should be made popular, and this system of silence should be abolished; otherwise it may be believed, as in the case we are considering, that is, the naval exercises, the silence is in consequence of the fact that no useful result has been obtained. The *Italia Marinara* is well informed, and follows as a labour of love everything which pertains to the Navy, and has used every effort to make public the official communications during the late manœuvres, in order that all may be in the position to speak well of the good, and evil of the bad. We know that there was an inspection of the maritime forts



by the Admiral Commander-in-Chief of the Navy, from Spezia to Venice. We know that the "Savoia" was fitted out for the said inspection, but we do not know what was the result of the inspection; which, however, has nothing whatever to do with the experiment in mobilisation. It was, in truth, a calling out of the classes 69, 70, 71, 72, the men of which presented themselves at the port authorities of their district, were registered in the books, and immediately sent back to their homes, whilst their names were placed in suitable envelopes and sent to their destination. This experiment has indeed served to show how many military in case of war would answer to their names and could be sent day by day to their ships or regiments. We do not criticise the method, which was the most economical possible, but it might have been equally well ascertained by a simple study of the roster. But the difficulty of mobilisation does not consist only in the number of the absentees, but in preparing means of transport for the men, ships to receive them, points of rendezvous—all concrete issues, and not to be resolved by a paper parade war with the most vague approximation. In fact, we want something real, and if that is not possible, then we must be content with studying the roster. The papers which we put in motion instead of the men is a most excellent invention, but in reality we cannot conclude a great deal from it, for the letters repose tranquilly in the train, whilst men require space, accommodation, nutriment, etc. There was only a real mobilisation in the case of the semaphore *personnel*, and this gave good results, because many little difficulties, local and material, were studied and surmounted. Moreover, in this case the men of the class called out were retained fifteen days on service and sent to occupy their proper stations for war, effectively carrying out the functions appertaining to them. As regards the operations of the first zone (from Vado to Circello), in which the coast territorial Militia were mobilised, the result, as far as there was any, was entirely to the disparagement of the much-laudated territorial Militia, as they were always surprised and routed by the ships. But we hold that the experiment was unnecessary, for who would dare to pretend that this Militia, spread over the littoral and disorganised as they are, could make head against the most feeble landing party or the most trifling bombardment? Among the many Utopias, there is this of coast defence by land troops. This grave error of our military system has conducted to our possession of a Navy little prepared for the defence of our coast line, and an Army out of proportion to our limited territorial needs. Do you wish the country to be persuaded of it? Make the Navy popular, and conceal nothing. And, after all, our last question is this: How many ships would be ready to take the sea the day after the declaration of war, and which? How many after the classes are called up, that is, fifteen days later?—*Italia Marinara*.

YPSILON.

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JAPAN.—Want of space has up to the present prevented our giving details of the steam and gunnery trials of the "Yashima," the new first-class battle-ship, recently built for the Imperial Government by Sir W. G. Armstrong, Whitworth and Co., at their Elswick shipbuilding yard. The vessel sailed from the Tyne about four months ago, and from some accounts lately received by the Elswick authorities of her voyage to Japan, it appears that she encountered strong winds and heavy sea and proved herself to be an exceedingly good sea boat, and by her behaviour gave great satisfaction to the officers in charge of her. In view of the present crisis in China, it may be of interest to point out that the "Yashima" and her sister-ship, the "Fuji," are for the present the two most formidable battle-ships in Eastern waters.

The dimensions of the "Yashima" are as follows:—Length, 372 feet between the perpendiculars; beam, 73 feet 6 inches; and with a mean draught of 26 feet 3 inches, she has a displacement of 12,400 tons. Her boilers are of the single-ended cylindrical type and she has two sets of triple-expansion engines, manufactured by Messrs. Humphrys, Tennant and Co. Protection is afforded by a belt of hard steel-armour, 18 inches thick, running two-thirds the length of the ship, and

her citadel is protected by 4-inch armour of the same material. Her armament consists of four 12-inch guns, ten 6-inch Q.F. guns, twenty-four 3-pounders, and five torpedo-tubes. The 12-inch guns are mounted in pairs on barbettes protected by Harveyized armour, 14 inches thick. Six of the 6-inch guns are carried in casemates of 6-inch armour on the main deck, and the remaining four are carried on the upper deck.

The first official trial of the ship was made off the mouth of the Tyne on July 13th with forced draught ( $1\frac{1}{2}$  inches of pressure), and was of four hours' duration. The mean speed attained during the trial was 10.127 knots, while the mean of four runs taken over the Admiralty measured mile gave 19.46 knots. The engines developed during the four hours 14,075 I.H.P., and there was an abundance of steam. Subsequently natural-draught trials and trials with open stokeholds have been made. The vessel steamed for six hours with open stokeholds; the mean speed attained during this period being 17.26 knots, while the mean of four runs over the measured mile gave 17.73 knots, and this speed was maintained over a considerable time, and might have been maintained over the whole six hours if it had been considered desirable to do so. As it was, the mean I.H.P. developed during the six hours was 9,570.

It should be observed that as the trials occurred during the strike of fitters, Messrs. Humphrys, Tennant and Co. were deprived of many of their old hands, and had to depend to a considerable extent on comparatively inexperienced men. Had it not been for this, even better results would doubtless have been obtained. As might have been expected, however, the results were considered as highly satisfactory by the Japanese Commission, the speeds obtained in each case being practically a knot in excess of that required by the contract.

But perhaps the most remarkable feature of this ship's performance was the exceedingly small circle in which she turned. Her designer, Mr. Watts, has for many years attached very great importance to manœuvring in war-ships of all classes, and he has been most successful in developing this quality in the "Yashima." Her lines are especially adapted for turning, all the after deadwood for a considerable length is cut away, and she has an exceptionally large balanced rudder. The resistful effect of the after deadwood to turning was demonstrated by Mr. Watts as far back as 1877, when making certain experiments for the "Inflexible" Committee with the "Thunderer," to ascertain the angle of heel in turning. He then took advantage of the opportunity to analyse and record exactly the motion of the vessel under the action of her rudder, and showed that the after deadwood offered more resistance to turning than any other part of the vessel. He at once advocated the removal of the deadwood from the ships in course of being designed at the Admiralty, but his proposal did not find much favour. He was, however, subsequently allowed to introduce it in a modified form, into the design of the "Polyphemus." But it has been recently adopted only in the smaller vessels of the British Navy. All of the vessels built and building at Elswick from Mr. Watts' designs possess this feature.

With her rudder hard over and both screws going ahead the "Yashima" can turn in a circle whose diameter is less than one and a half times her own length, and she can reverse her direction when going at full speed in about one minute. But with only 10° of helm she can turn in a circle whose diameter is rather more than three times her own length and reverse her direction in 1 minute 26 seconds. The results of the trials show that this vessel is notably the fastest war-ship of her class, and that she possesses much greater manœuvring power than any other battle-ship.

The "Yashima," before leaving England, underwent an extensive series of torpedo trials for testing her new torpedo ejecting apparatus. Both the "Yashima" and "Fuji" were each fitted with four submerged torpedo-tubes, designed and made by Sir William G. Armstrong, Whitworth, and Co., Limited.

The trials on board the "Fuji" took place on July 14th, at Portland, when successful trials were made at 16 knots and at lower speeds. Although this was very satisfactory, it was determined to subject the torpedo-tubes on board the "Yashima" to a more exhaustive trial, and a series of discharges were made in this vessel up to 17.5 knots. The first trials took place on August 27th, when a number of rounds were fired with the ship stationary, and then at 15, 16, and 17 knots, the results leading to some adjustments being made. Further trials were carried out on September 15th at the mouth of the Tyne. On that day a further number of rounds were fired with the ship stationary, and at various speeds up to and including 17.5 knots, with most satisfactory results. In each case the cordite impulse was used. The torpedo-tubes gave every satisfaction, as they have done on all occasions when they have been used; and, as now 150 rounds have been fired from this apparatus, it may safely be said that it has completed its experimental stage. A remarkable feature in connection with these submerged tubes is that even at a speed of 17 knots the deflection of the torpedo is so little that it may be almost accounted as negligible. The "Yashima's" gunnery trials took place on August 25th. Three rounds were fired from each of the four 12-inch guns, and from each of the 6-inch Q.F. guns. Also four rounds were fired from each of the Hotchkiss Q.F. guns, and the trials passed off without any hitch or difficulty. Her offensive powers may be said to be equal to those of our latest ironclads; for although the "Majestic" and the "Magnificent," and their sisters, carry four 12-inch guns and twelve 6-inch Q.F. guns, and the "Yashima" and "Fuji" carry four 12-inch guns and ten 6-inch Q.F. guns, the actual power or energy of the Japanese guns, comparing gun for gun with English guns, is much higher. The vessels themselves are 12,200 tons, as compared with the 14,900 tons of the "Majestic" and "Magnificent," but the point of comparison which is most favourable to the "Yashima" is her speed of 19½ knots.

*From Notes supplied by Sir W. Armstrong and Co., who also kindly presented the photograph of the ship, which forms the frontispiece of this month's JOURNAL.*

At the present time there are under construction the following additional ships for the Imperial Navy:—

1. Three 14,800-ton battle-ships, which are well advanced at Armstrong's, Thompson's, and the Thames Iron Works respectively.
2. One battle-ship of about 10,000 tons, commencing at Armstrong's.
3. Four first-class armoured-cruisers of 9,600 tons displacement and 20 knots speed; two at Armstrong's, one at the Vulcan Works, Stettin, and one at the Forges et Chantiers de la Loire, France.
4. Two 5,000-ton protected cruisers of 22.5 knots speed, one at San Francisco, and one at Philadelphia.
5. One protected cruiser of 4,300 tons, and 22.5 knots at Armstrong's.
6. Four 30-knot torpedo-boat destroyers at Yarrow's.
7. Four more of similar type at Thompson's.
8. Eight 90-ton torpedo-boats at the Schichau Works, Elbing.
9. Four more of a similar type at the Normand Works, France.
10. Three 3,000-ton protected cruisers of 20 knots, three torpedo gun-boats, and a despatch-vessel, at the Imperial Dockyard, Yokosuka, Japan.
11. A fifth armoured-cruiser of the type already described (9,600 tons and 20 knots), to be built at Yokosuka.

Of these new vessels, two have already been launched, viz., the "Kasagi Kan" from the yard of Messrs. Cramp, at Philadelphia, on the 21st ult., and the "Chitose" on the following day from the Union Ironworks at San Francisco. These ships have a displacement of 5,000 tons and the engines are to develop 15,500-I.H.P., which it is hoped will give them a speed of nearly 23 knots. Their armament will consist of two 5-inch guns, one forward and one aft, ten 4.7-inch Q.F. guns, with sixteen smaller Q.F. guns and five torpedo-tubes.

## MILITARY NOTES.

### PRINCIPAL APPOINTMENTS AND PROMOTIONS DURING JANUARY, 1898.

Lieut.-Generals R. N. Dawson-Scott, Royal Engineers, and E. H. Clive, *p.s.c.*, to be Generals; Major-Generals Sir C. Warren, G.C.M.G., K.C.B., Royal Engineers, and J. P. C. Glyn, to be Lieut.-Generals; Colonels R. H. Abadie, C.B., and R. F. Butler (temporary Major-General), commanding the troops, Barbados, to be Major-Generals; Colonel (temporary Major-General) W. F. Gatacre, C.B., D.S.O., to be a Major-General on the Staff to command a Brigade in Egypt; Colonel H. J. T. Hildyard, C.B., *p.s.c.*, to command the 3rd Infantry Brigade, Aldershot District, with temporary rank of Major-General; Major-General E. A. Stuart to be Colonel of the Royal Scots (Lothian Regiment); Major-General C. F. Gregorie, C.B., to be Colonel of the Royal Irish Regiment; and General Sir R. Gipps, K.C.B., to be Colonel of the Durham Light Infantry; Lieut.-General Sir G. S. White, G.C.B., G.C.I.E., to be G.C.S.I.; Brevet Colonel W. W. Lawrence, from the Royal Irish Regiment, to command the 18th Regimental District.

HOME.—The nationality of the Highland regiments in respect of their *personnel* has been the subject of some discussion in the Press, but the arguments have not been generally sound, nor has the information adduced been remarkable for its accuracy. There appears to be no doubt that the martial spirit which appears to have stimulated Highlanders and Scotsmen during the old wars has to a great extent succumbed to the craze for money-making and the teachings of Scotch ministers. From 1740 to the end of the century no fewer than 50 battalions of Highlanders alone (exclusive of Lowland regiments) were raised, 34 of which were employed in the Continental and American wars and in India. 13,586 Highlanders were raised for different regiments north of the Tay in 1779-80. In 1803-4 another batch of 8,615 Highlanders was raised for different regiments.

From 1793 we were continually at war, and with so many Highland regiments to feed it is not surprising that at last there was a scarcity of men: and consequently, on the 7th April, 1809, an order from Head Quarters was issued, stating that as the population of the Highlands of Scotland was found to be insufficient to supply recruits for the whole of the Highland corps in His Majesty's Army, and as some of these corps, by laying aside their distinguishing dress, which was objectionable to the natives of South Britain, would induce the men of the English Militia to enter, the 72nd, 73rd, 74th, 75th, and 94th Regiments were ordered to discontinue wearing the Highland dress. In addition to these, the 91st gave up the Highland dress in 1809, and the 71st relinquished the kilt, bonnet, etc., for trews and shako, in 1810, a year after its formation as light infantry. The 72nd were restored to the position of "Highlanders" in 1823, the 74th in 1845, and the 91st in 1864, although they wore the trews instead of the kilt.

In regard to the composition of the permanent Highland regiments at different periods, commencing with the Black Watch, the number of men enlisted for both battalions between 1807 and 1812 was 2,265, of whom 1,980 were Scots, 84 English, and 201 Irish. The 1st Battalion, during the Waterloo campaign, had 759 Scots, 28 English, and 90 Irish, while in 1818 there were only 53 men in the regiment who were not Scots. The 71st (1st Battalion) between 1804 and 1815 enlisted 889 Scots, 93 English, 418 Irish, and 10 foreigners (probably musicians); for the 2nd Battalion there were enlisted between 1806 and 1818 1,671 Scots, 155 English, 669 Irish, and 10 foreigners. Leaving out the 72nd, 73rd, 74th, 75th, 91st, and 94th, whose designation and dress were taken away in 1809, we come



to the 78th. When raised in 1793 the 78th was composed of 1,000 Highlanders, and in 1811, although the regiment had been in India several years, it contained 835 Highlanders. Of one draft of 400 men sent to the regiment in India in 1808 from the Perthshire and Ross-shire Militia, the whole lot were Highlanders, and 300 of them "six feet and upwards in height, with strength of limb and person equal to their height." The 79th, raised about the same time as the 78th, consisted of nearly 1,000 Highlanders, and up to 1815 the proportion of English and Irish was very small. Although called the "Cameron" Highlanders, very few of that name are found on the books. Of the 92nd, when first raised as the 100th, three-fourths were Highlanders. It was a very pure regiment, and up to Waterloo nine-tenths were always Scotsmen (and chiefly Highlanders). The 93rd, when raised by General Wemyss in 1800, consisted for the most part of Highlanders from Ross and Sutherlandshire.

The Highlands of Scotland maintained the foregoing regiments at the beginning of the present century, but the demands on the population of the Highlands were many and large, continuing with scarcely any intermission for nearly half a century. One war succeeded another in the most rapid manner, and the demand for men was so great, and the martial spirit of Scotsmen so much taken advantage of by the Government, that it is wonderful the resources of Scotland, limited in population as it was, were not exhausted altogether. As has been shown, six regiments, failing to keep up their national character, dropped the Highland dress and designation in 1809. But those which remained Highland—the 42nd, 78th, 79th, 92nd, and 93rd—are clearly shown to have maintained their characters as such, although a small proportion of English and Irish always crept into the ranks. This fact has given rise to the assertion, on the part of those who know no better, that the ranks of the Highland regiments have never contained many Scotsmen and Highlanders, from each individual Englishman or Irishman being counted as fifty.

The condition of the Highland regiments before, during, and after the Russian war can be gathered from the monthly returns rendered by each regiment to the War Office. Take the six regiments which formed the Highland Division in the Crimea, the 42nd, 71st (trews), 72nd (trews, with bonnet), 79th, 92nd, and 93rd. On the 1st January, 1854, the 42nd consisted of 840 Scots, and 16 English and Irish; the 71st (including the reserve battalion at Quebec), of 1,010 Scots, and 119 English and Irish; the 72nd (including dépôt), of 758 Scots, and 87 English and Irish; the 79th of 878 Scots and 11 English and Irish; the 92nd (including dépôt in Scotland), of 885 Scots, and 16 English and Irish; and the 93rd, of 785 Scots and one Englishman. So that it is clear that these regiments were very pure in the matter of nationality.

On the 1st January, 1856, the 42nd (including dépôt in Scotland), consisted of 991 Scots, and 221 English and Irish; the 71st of 1,087 Scots, and 169 English and Irish; the 72nd of 920 Scots, and 177 English and Irish; the 79th of 1,117 Scots, and 68 English and Irish; the 92nd of 991 Scots, and 45 English and Irish; and the 93rd of 1,058 Scots, and 54 English and Irish. These six regiments formed the Highland Division in the Crimea; and at the end of hostilities, before returning to this country, stood thus, including the dépôts:—6,164 Scotsmen, and 734 Englishmen and Irishmen. The 42nd contained 221 English and Irish, which arose from their having been the last ordered for war service, and, previous to being placed under orders, having given a large number of volunteers to raise the other Highland regiments to the war complement. Therefore, when also ordered to be raised to war strength for service in the field, volunteers from any other regiment at home had to be received, as, of course, recruits could not be drilled in time to meet the emergency. It may be added that when General Sir John Macdonald was Adjutant-General (he resigned in 1850) he allowed none but Scotsmen to be in the regiment, both as regards officers and men.

On the 1st January, 1857, after the war, and before proceeding to India, the



same regiments managed to preserve their nationality. The 42nd had (including depôt), 1,005 Scots, and 226 English and Irish; the 71st, 1,085 Scots, and 141 English and Irish; the 72nd, 986 Scots, and 170 English and Irish; the 79th, 895 Scots, and 76 English and Irish; the 92nd, 1,043 Scots, and only 47 English and Irish; and the 93rd, 984 Scots, and 84 English and Irish. Taking the six regiments together, they contained about 6,300 Scotsmen, and 900 English and Irish. The 74th and 78th were both in India during the Russian War, and managed to preserve their nationality fairly well. The 78th, however, had a very bad time in India in 1844-45, losing in six months no fewer than 496 men, 2 officers, and 171 women and children, from cholera. When this became known in Scotland, great difficulty was experienced in obtaining men, and they were forced to recruit in England, where the calamity was unknown among the lower classes.

On the 1st March, 1861, the Scots Greys contained 322 Scots, and 300 English and Irish; the 42nd, 941 Scots, and 302 English and Irish; the 71st, 836 Scots, and 149 English and Irish; the 72nd, 866 Scots, and 284 English and Irish; the 74th, 871 Scots, and 320 English and Irish; 78th, 782 Scots, and 220 English and Irish; 79th, 1,037 Scots, and 232 English and Irish; the 92nd, 959 Scots, and 191 English and Irish; and the 93rd, 1,112 Scots, and 192 English and Irish.

In regard to the officers, the foregoing regiments were in a very unsatisfactory condition. The 71st Light Infantry, for instance, could only muster 8 Scottish officers, the remainder being 26 English and 10 Irish. Taking the nine regiments together, they contained 174 Scottish officers, 193 English, and 50 Irish.

According to the latest return, there were 11,565 Scotsmen serving in the infantry of the Line. Taking the number of Scottish battalions which are now maintained in the Service—12 Highland and 8 Lowland—an idea can be obtained of the average number of Scotsmen in each battalion. This, of course, gives no indication of the purity of individual regiments. The General Annual Return of the British Army and the Report of the Inspector-General of Recruiting do not assist one, so one must look elsewhere for the information, and give it on a future occasion.

Several Imperial officers and non-commissioned officers for the Lagos Hinterland left England on the 5th inst. Their destination is Lagos, and from there they are to go to Ibadan, where a new regiment is being recruited of Yoruba natives. There are two regiments being recruited on the coast, which are to be called the 1st and 2nd Battalions of the West African Regiment. The officers are to instruct the recruits, and they understand that when sufficient progress is made at Ibadan the men will come down to Lagos, and go up the Niger to Lokoja, but that is not expected to take place for several months yet. The 1st Battalion of the new West African Regiment at present has its headquarters at Lokoja, on the Niger; but it is ultimately intended that the headquarters of both battalions shall be at Lokoja. The 2nd West African Regiment is being furnished with sixteen Maxim guns. Kumassi has now been made a distributing depôt, so that officers going up there will be sent to augment the various posts which have been established in the Hinterland of the Gold Coast within a certain radius of Kumassi.

Some interesting information is to be gathered from the report on the Irish manoeuvres of 1897, in regard to the marching power of the troops. There is a very apparent improvement on the marching capacity of the men in previous years, but there is a very marked difference between the marching of different battalions. In those battalions in which the best discipline prevails, the marching quality of the men is most apparent. That route marching has had a great deal to say to this improving state of affairs goes without saying, but the week's continuous marching in February is condemned by officers and men alike as unnecessary and irksome. The opinion expressed in the report is that every man should have

practice in marching once or twice a week all the year round in marching order, but some of the best authorities are opposed to this idea.

One of the causes for the improvement in the marching power of the men seems to be the greater attention which is paid by commanding officers to the condition of the men's feet, and the fitting of their boots and socks. However, a careful inspection previous to the manœuvres revealed the fact that there were men in the ranks with deformed feet and other ailments, which rendered it necessary for them to be excused from taking part in the manœuvres. In some instances these ailments were of long standing and of a permanent nature, which would seem to imply a want of care on the part of the medical officers who passed the men into the Service, and to call for a more periodical examination of the men's feet. It is a very bad system which leaves to the last moment, before the men are required for active service, a medical examination which may result in many of the men being rejected.

Of the minor cases treated daily in camp, a large proportion consisted of sore feet caused by blisters. Many of the cases of sore feet were due to the ill-fitting boots, which shows that there is still room for the bestowal of more attention to these details. Taken generally, the boots fitted well, but the same cannot be said for the socks. The Army sock seems to shrink in washing, and men either get their socks in the first instance too large to allow for shrinkage in the wash, or they get properly fitted in the first instance, and the socks shrink in the subsequent process of washing.

An Army Order announces that non-commissioned officers and men belonging to the Reserve of the Infantry of the Line (Sections B and C) are to be permitted to rejoin the colours to complete twelve years from their date of attestation, subject to certain conditions. They must have at least two years to serve, and will rejoin their own regiments, and be posted to the home battalions, or to the depôts where both battalions are abroad. If officers commanding approve they will take up the rank they held on transfer to the Reserve, and will resume the good-conduct pay and badges they may have held on previously quitting the colours. On rejoining they will not be required to refund deferred pay issued to them on transfer to the Reserve, and will receive free kits. No gratuity will be given on rejoining, but on discharge at the termination of his engagement each man will receive a gratuity of £20 in lieu of any deferred pay to which he would then become entitled. All sergeants rejoining, as well as some of the drummers and rank and file—not exceeding 3 per cent. of a battalion's rank and file establishment—will be allowed to be married, their wives being extra to the married establishment. The wives of married men rejoining will be granted the regulation separation allowance until they rejoin their husbands. Officers commanding regimental districts, will exercise their discretion in refusing men whose re-admission may seem to them undesirable.

It is also announced that soldiers of the Line infantry at home whose colour service expires before December 31st, and those coming home for transfer to the Reserve during the year, may extend their colour service for a further period of two years, provided they be of satisfactory conduct. They will receive the deferred pay due to them up to the date of extending service; will be granted a furlough not exceeding three months; and on final transfer to the Reserve will receive the remainder of their deferred pay. Men thus extending will be considered to have a claim to join the Supplemental Reserve (Section D) on completing twelve years' engagement. These instructions are to remain in force till further orders.

As any interference with the Army Reserve would not be tolerated by the Authorities in ordinary circumstances, there seems good reason for the belief that a lack of recruits is the sole cause for the issue of this order. The Reservemen who are now invited to rejoin the colours will be required to leave their regiments again on completing the twelve years' period of colour and reserve

service for which they originally enlisted. That is to say, in the case of a man who served his first seven years with the colours, and has been for three years in the Reserve, if he now rejoins he will be once more an unemployed Reservist in two years' time. The greatest proof of the awkward position in which the authorities are placed for recruits, is that they offer each man who so rejoins a sum of £20, when he again becomes a Reservist, though at the usual rate, after two years with the colours, he would only be entitled to two-sevenths of that sum as deferred pay. Taking into consideration the fact that the Reserve-men who take advantage of this order will not be required to refund the deferred pay, which they received on transfer to the Reserve, and allowing for the additional £20 to which they will now look forward, the cost of these Reserve-men rejoining the colours will quite equal the heavy bounties which were paid for recruits in the old days, and which were discontinued long since as unsatisfactory and extravagant.

The result of this Army Order will be watched with great interest. It has been said by many critics of the present system that the country is overrun with Reserve-men anxious to rejoin the colours, but that they are prevented from doing so by being required to refund their deferred pay. This new Army Order will not have been issued in vain if it settles this debatable point once and for all. Judging by the failure of the Army Order, inviting Reserve-men of the Brigade of Guards to rejoin the colours without refunding their deferred pay, much doubt prevails in some quarters whether the recent invitation to the Reserve of the infantry of the Line will meet with any greater success.

The year 1859 may be taken as about the period when serious attempts were first made in this country to create a Reserve for the Regular Army. Prior to that no efforts had been made to raise a force which would be capable of supplementing the ranks of the Regular Army for service wherever required. The Militia re-organised in 1757, and [during the long war with France lasting from 1793 to 1815,] the Fencibles, the Militia, the Army of Reserve, the Local Militia, Supplementary Militia, and Volunteers, were the only reserves which the country possessed, but none of these forces were available, in ordinary circumstances, to assist the Army abroad. After the close of the long war in 1815, and until 1852, the country possessed no Reserve at all, not even for the assistance of the Army at home in defending the Kingdom, for the Militia was practically permitted to die out, having only been called out for training four times between 1815 and 1852—in 1820, 1821, 1825, and 1831—the Army of Reserve had ceased to exist, and the Local Militia and Volunteers were also allowed to die out.

The first move towards providing a Reserve for the Army, other than the Militia, was made in 1843, when the Crown was authorised to enrol 10,000 pensioners, staff officers of pensioners being appointed to pay and command them.<sup>1</sup> But the object of the enrolment was to have a force to act in aid of the civil power, which, at that time, had no rural police at its back; and the Crown was entitled to use only the voluntary services of the enrolled pensioners in the event of war. In 1859, a Reserve force was instituted by Mr. Sydney Herbert. The Crown was permitted to engage men of at least five years' service to the number of 20,000, who were to have a bounty of £4 annually, and in war were to serve as Regular soldiers within the United Kingdom; they were to be entitled to a pension at 21 or 24 years' service, reckoning two years in the Reserve as one year for pension. In 1867, under the "Reserve Force Act" of that year, the two above-mentioned forces were together classed as the "Second Class Reserve"; and a "First Class Reserve" was established, which was to consist of 20,000 men who had not completed their first term of service in the Army. These latter received the annuity and reversionary pension as in 1859, but were to be available

<sup>1</sup> "Army Book for the British Empire," p. 49.

in war-time to serve abroad as well as at home. The result of these measures, up to December, 1868, was a very poor one. There were then 13,068 enrolled pensioners, besides 2,847 of the reserve of 1859, and 2,033 of the "First Class Reserve" of 1867.

On 20th August, 1867, was passed the "Militia Reserve Act"<sup>1</sup> a most important Act in regard to the constitution of the Militia. Under its provisions one-fourth of the quota of the United Kingdom, or 30,000 men, were authorised to be enlisted, at an additional bounty of £1 per annum, in consideration of which they became liable to be drafted into any regiment of the Regular Army in case of war, or imminent danger thereof. When this Militia Reserve was first started, it was very unpopular with the men. It appears<sup>2</sup> that out of three regiments of Militia to which the terms were first made known—the 3rd Battalion East Surrey Regiment, 4th Battalion Oxfordshire Light Infantry, and the 3rd Battalion Hampshire—only eight men offered themselves for the Reserve. The 4th Oxfordshire Light Infantry did not produce a single recruit, neither did the 3rd Hampshire; indeed, thirty-eight regiments failed to find a single candidate; and the reason assigned for this remarkable circumstance was that the men did not like to serve without their officers. The men asked if their officers were going too, and when they found that such was not the case they determined to have nothing to do with the Reserve. All this is now changed. The Militia Reserve is exceedingly popular. It consists of a very fine body of men, and there is no difficulty in recruiting its ranks.

*(To be continued.)*

AUSTRIA-HUNGARY.—An Austrian officer has written a work entitled "Numbers in War," in which he discusses how wars will in future be commenced, with what fighting strength they will confront each other, what will be the importance of numerical superiority, how long campaigns and battles will last, and what will be the probable losses, owing to the modern weapons of artillery and infantry. The author is of opinion that some Powers would not scruple to begin hostilities without any formal declaration, in order to obtain the advantage possessed by the offensive over the defensive. Future wars will be waged by "armies of masses." Russia has 2,500,000 soldiers; Germany, 2,300,000; France, 2,200,000; Austria-Hungary, 1,300,000; Italy, 800,000. France and Russia could, therefore, bring 4,700,000 men against the 4,400,000 of the Triple Alliance. If the chief campaigns of the century be examined, it will be found that in forty cases against six the victory was due to superior numbers. That is the first and last chance of success in war; not, of course, absolute superiority at all times, but at the critical time and in the desired place. The art of obtaining this superiority should be possessed by the commander-in-chief. It is, however, quite understood that numbers without sufficient instruction and equipment are worthless, as was proved in the second period of the Franco-German war. Allied operations are only desirable when the allied armies are under one commander. There is no prospect of shorter wars in the future. The author cites instances of successes gained by young generals, whom he seems to prefer, especially for cavalry, to those of more mature years. With regard to losses in war, it is stated that during the Franco-German war 500,000 German soldiers were sick and only 88,000 wounded. On the subject of fortresses it is asserted that, with few exceptions, all the important sieges of the century have ended in the reduction of the place, but in many cases they had a great influence on the general conduct of the war. Losses in battle fall nearly as heavily on the victor as on the vanquished—a statement supported by abundant statistics in this work. There may be more terrible scenes at particular spots on a battle-field, but the percentage of loss on

<sup>1</sup> 30 and 31 Vict., c. 3.

<sup>2</sup> "The Enlistment of the Militia for Foreign Service." By Capt. R. Holden. *Journal R.U.S.I.*, 1890.



the average will not be greater than in the wars of this century. Speaking of marches, he says that no modern Army could march with the rapidity and endurance displayed by Napoleon's troops, but that future wars will probably be characterised by rapid operations. His calculation is that an average loss of 10 per cent. is due to marching. In the 10th German Army Corps and in the Guards the loss from this cause amounted to something between 8 and 10 per cent. a few days after the commencement of the war.—*Revue du Cercle Militaire*.

According to a newly-promulgated order the Hungarian Landwehr Cavalry are to be immediately under the Landwehr district commanders. The Landwehr Cavalry Inspector is in one respect to be regarded as an assistant to the Minister of National Defence, that is, so far as questions concerning the Landwehr and Landsturm or anything connected with horses are concerned. On the other hand, he holds independent command of the Landwehr Cavalry and Landwehr Cavalry Central School.—*Militär-Zeitung*.

BELGIUM.—The Belgian General Staff has brought before the Government the fact that the Northern Railway Company of France owns the lines running from the French frontier to Namur and Liège. In the interest of the Belgian Land Defence, the General Staff requests that this state of things may be altered as quickly as possible. The towns of Namur and Liège dominate the Maas line of fortifications, which is the strongest in the kingdom, but the possession by Frenchmen of lines running thither from France constitutes a danger to the country. It should therefore be demanded that these lines change hands. Hitherto the French Northern Railway Company has refused to sell.—*Militär-Zeitung*.

BULGARIA.—Physically and morally the Bulgarian troops resemble the Russian. They are enduring, contented, and have good marching power, but are somewhat slow and have no dexterity in utilising ground or in handling modern weapons. The Turkish soldier has the same characteristics, but without the slowness of the Bulgarian. The Roumanian soldier has rather less endurance, but he has more of the activity demanded by modern tactics; and the Servian, while quicker and more active than the Bulgarian, is less tenacious and less tractable. The Bulgarian officers stand high both in military education and in zeal, and the Army should take the first place among the Balkan States, if only certain reforms were introduced. Modern small-bore rifles are necessary, and quick-firing guns; the cavalry must be re-organised, and the cadres of a train must be established. The War Minister intends, as soon as funds are in hand, to carry out the following measures: to replace by five regiments of four squadrons each, the existing four regiments of five squadrons, and to attach a regiment to each division of the Army; to form a new cavalry regiment for a reserve division; to adopt the French small-bore rifle; and to establish cadres for the train, with reserves of transport and riding horses. Above all, the officers should hold themselves aloof from politics, and no countenance should be given to any who, in the past, have misled the Prince and the country.—*Deutsche Heeres-Zeitung*.

FRANCE.—It is proposed to construct a new *enceinte* for Paris, of equal defensive value to that which is about to disappear. The proposal does not contemplate continuous defences. On the contrary, the Minister declared, and we congratulate him thereon, that he intended merely to establish a series of works capable of playing the part required of the old ramparts of 1841. The latter, at the time of their construction, served a twofold purpose; they prevented the capture of the capital by a *coup de main*, and obliged an enemy to proceed by the regular steps of a siege. The adoption of rifled guns reduced their value, and in 1870-71 it became evident that the power of resistance possessed by Paris



resided at that time entirely in her detached forts. The recent improvements in artillery have accentuated the situation. Of what service are the fronts of Point-du-Jour and d'Auteuil, dominated, at a short distance, by the heights of Bellevue, Brimborion, and the park of St. Cloud? An enemy who succeeded in occupying these points could, merely with field guns, render the ramparts untenable, and bombard half of Paris. The situation is not much better on the east, in case of an enemy occupying the heights of Romainville-Noisy. The *enceinte* of Paris is useless except as an obstacle to surprise or sudden assault. The demolition of the *enceinte* on the left bank of the river is of no moment, because the line of defence by Bas-Meudon, joining the southern forts, is a superior development. It appears, from the remarks of the War Minister, that the sale of the lands no longer required for the fortifications would bring about 150 millions of francs, and as 50 millions would be enough to build the new works there would be 100 million francs to the good. It is to be hoped that the Chambers will come to a prompt decision on this matter which, has long been waiting for solution.—*Le Spectateur Militaire*.

It has been decided to demolish a part of the fortifications of Belfort, at the *porte de France*. This has been necessitated by the union of the suburbs on the right bank of the Savoureuse with the town itself. Part of the expense is to be borne by the War Department and part by the town of Belfort. The demolition will be commenced as soon as the suburban *enceinte* has been sufficiently advanced to assure the security of the place.—*Revue du Cercle Militaire*.

So long ago as 1892 a committee was appointed to decide on the military utensils which could be made of aluminium. After experimenting for two years, the committee reported that the metal might be well employed instead of tin in the manufacture of camp utensils. In 1894, 1895, and 1896, such utensils were practically used by the troops in France, Algeria, and Madagascar, and were reported on as being superior to those made of tin, being lighter, cleaner, and so forth. Finally, the War Ministry has issued a large supply of these utensils, consisting of basins, cooking apparatus, etc., to the troops of all arms in each army corps, so that an exhaustive trial may be made. The last reports are to be sent in not later than the 30th June, 1898.—*Avenir Militaire*.

A new cavalry manœuvre ground is about to be acquired, situated partly in the Department of the Marne and partly in that of the Aube. It lies between Châlons-sur-Marne on the north and Arcis-sur-Aube on the south. The ground is very suitable and has a high strategic value. It forms a quadrilateral about 12 kilometres long and from 5 to 10 wide.—*Militär-Wochenblatt*.

Readers of the *Figaro* will remember the lively emotion caused by the creation at Eisenbern, near Malmedy, of a camp of instruction for the use of the German troops in the Rhenish provinces, by which means our neighbours succeeded in securing in the Ardennes wide areas in which field firing practice, as in war-time, can be carried out.

The Germans in this matter are far ahead of us (the French); in each of their military departments they now dispose of wide spaces in which their chiefs can thoroughly instruct their regiments.

In France we are behindhand; except at Châlons and Valbonne, our army corps do not possess areas of sufficient extent. It has become necessary at any price to secure for our troops the wide spaces necessary for the study of the new fire tactics. This necessity has for a long time past occupied our headquarter staff; unhappily, the acquisition and preparation of the thousands of acres requisite for manœuvres of the present day constitute a grave embarrassment. It is necessary to act with prudence unless land is to be bought above its value, but these difficulties have in a measure been surmounted. A large camp has been created near

Sissonne for the 2nd Corps, and it is proposed to utilise the wide extent of Champagne, near Arcis-sur-Aube, to supplement the camp at Châlons, which is insufficient. It is also proposed to form a camp near Bourges to enable the 8th Corps to go through all its exercises. There are, however, in many places difficulties about water; this, however, would not apply to the wide wastes occupied by marshes, heather, and pine woods, where it is proposed to create a great camp of instruction for the 5th, 8th, and 9th Corps, as mentioned in the *Figaro*.

There, between the railways to Toulouse and the great and little Sauldre de la Reve, the sparsely-peopled lands extend for 12 kilometres from north to south, and 20 from east to west. The Naon, the Sisse, and other water courses run through depressions, constituting a territory of great value for experimental exercises.

Without camps of instruction the sacrifices we have made in improving our armaments would be in a great measure useless.

The Germans have shown us how to manage these things.—*Figaro*.

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ITALY.—Notwithstanding the remarks of some foreign journals, there is no intention of abolishing the Cavalry School at Pignerol, although situated in a mountainous and broken country where marching is difficult except on the roads. In fact, it is announced that the town of Pignerol has sanctioned a considerable outlay to provide new barracks for the school, capable of lodging 300 men, and stables for 250 horses; also to improve the galloping course, and to build larger infirmaries than those at present in use. It is further stated that the school is to be provided with a third squadron of grooms. The first and second are at Pignerol, and send detachments to Rome to assist in the cross-country instructional courses; the third, which is at Turin, supplies the War School, the Artillery and Engineering Application School, and the Military Academy, besides sending a detachment to the Military School at Modena. The effective of the two squadrons at Pignerol amounts to 600 horsemen and 517 horses. The first course at Pignerol is for newly-appointed sub-lieutenants of cavalry; the second is a superior course for officers of cavalry and horse artillery; the third is for under-officers intended to pass as under-officer-instructors in equitation; the fourth is for under-officers intended to pass as officer-instructors in equitation; and the fifth is a course of farriery.

Important announcements relating to the re-organisation of the Italian Army were made public on the 11th and 13th December last. These deal with the creation of dépôts for the regiments of infantry of the Line, of grenadiers, of bersaglieri, and of Alpine troops, together with the transformation of the districts. The composition of the cavalry brigades has also been revised. Hitherto the districts (recruiting offices) have had the duties of receiving, clothing and equipping recruits and reservists of the infantry called out in time of peace or war; they have also been responsible for the mobilisation of both mobile and territorial Militia. The dépôts will in future relieve the districts by undertaking the calling out, clothing, and equipment of their respective recruits and reservists, and by organising the mobile Militia. The districts will still have charge of the current recruiting business, the mobilisation of the men of the various reserves, the requisition of horses, and the control of the territorial Militia. An 88th military district is now added to the eighty-seven previously in existence. The dépôts are commanded by lieutenant-colonels, and are placed in the localities which supply their reservists in case of mobilisation. There are also ninety-four centres whence the ninety-four line regiments have to draw their provisions. The grenadiers, bersaglieri, and Alpine troops have dépôts in their own special localities. The nine brigades of cavalry are distributed among the larger towns of Italy.—*Revue du Cercle Militaire*.

RUSSIA.—The successor of General Obrutcheff, as chief of the general staff, is General W. W. Sacharoff, late chief of the staff in the Odessa military district. He is regarded in Russia as a military authority of the first rank. Having passed with distinction through the Alexandra School and the Nicolas Academy, he was employed on the general Staff till 1876. When the Russo-Turkish war broke out he served on the staff of the Army and held appointments till 1889, when he was attached to Prince Vladimir, commanding the Guards, in St. Petersburg. He was next appointed to high posts successively in St. Petersburg and Warsaw, and ultimately in Odessa, whence he came to occupy his present position. General Sacharoff is said to have had a liberal European education, and to be popular both in the Army and in society.

An Imperial Order of the 1st January, 1898, decides the details of the two new army corps which, as recently announced, are to serve on the western frontier of Russia. The 42nd, 45th, 46th, and 47th Reserve Infantry Brigades will contribute to the formation of the 42nd and 45th Divisions. In the military districts of Vilna and Kieff, the reserve infantry brigades have been formed into divisions of the new army corps. The actual increase amounts to 32 battalions, or 15,200 men, to which must be added the 2,800 new men enrolled in the 32 battalions formerly of the Reserve, but now of the Line. Thus the increase to the Standing Army amounts to about 18,000.—*Militär-Zeitung*.

General Dragomiroff has been giving expression to his views on the great wars of the past in a Russian journal. He says that the soldiers of to-day require to be educated up to the point of self-sacrifice, because it is always possible a time may come when they must either face the probability of death or be guilty of cowardice. Losses from hostile fire may and ought to be reduced to a minimum, but the fact should not be forgotten that war is made not so much to avoid losses as to gain certain ends. Stories of showers of bullets are generally got up for the benefit of soldiers who do not perform their duty on the field of battle. We should always remember that the enemy does not monopolise the firing, and that we take our part in the game with him; further, that of two adversaries the victor will be, not he who has the best rifle, but he who shoots best and is least anxious about the safety of his own skin.

Engineers have begun to take levels for the construction of the railway which has been projected between Merv and the military post of Konchk on the Afghan frontier. Thence there will, as soon as this line is finished, be direct communication with the Caspian Sea, and consequently with the rest of Russia. It will be known as the Mourghab branch, its length will be about 317 kilometres, and its cost, including rails and rolling stock, will be a little over 8,700,000 roubles. There will be seven stations on the line, namely, Sary-Yazy, Kapterkhan, Sultan-Bend, Imambaba, Tach-Koupri, Kalkh-i-Mor, and Kouchk. It is expected that the work will be finished in three years. It is also calculated that during the present year the Samarkand and Andijan railway will be completed, including its Tachkent and Marghilan branches.

Are-action has commenced against the disadvantages connected with the present mode of instruction in equitation. It is true that the winter is fully occupied in forming the young cavalry soldier, and the ancient feats of show horsemanship have been abolished, their place being taken by a really rational and practical equestrian education. Further facilities are, however, required. All the work of the winter would be better done if re-engaged under-officers were employed as rough riders. Other Armies do not hand over their young horses to any but expert and experienced men. Three years may be enough to make a trooper, but not to make a rough rider. Another improvement asked for is that covered riding schools be provided, instead of open *manèges* in which the cold and snow prevent both the instructors and the men from doing their duty as it ought to be done.—*Revue du Cercle Militaire*.

SPAIN.—In 1895 a telegraphic company existed in Cuba, and before the end of the same year a second company was formed. Early in 1896 two telegraphic companies organised in Spain were sent out to join the expeditionary corps, and in October of the same year two more were similarly despatched to Cuba. The Captain-General then formed them into a battalion of six companies, 5 for visual, and 1 for electric telegraphy, consisting of 37 officers, 1,136 under-officers, corporals, and soldiers, and 98 horses and mules. At the end of June, 1897, 75 stations had been established by the first five companies. The greater part of the sixth or electric telegraph company is stationed at Havana.—*Revue du Cercle Militaire*.

SWITZERLAND.—The Swiss grand manœuvres of 1898 will take place between Sursee and Baden, and be carried out by the 4th Army Corps. At the close of the manœuvres this corps will march against an enemy not represented as has been the custom by a few battalions of recruits, but composed of fourteen infantry battalions of the 3rd Army Corps with cavalry, artillery, engineers, and troops of the subsidiary services.

By a decree of the 14th December, 1897, an aerostatic company has been formed. The men of this company who pass into the Landwehr will be available for service at the dépôt. The strength is as follows:—1 captain, 2 lieutenants, 1 sergeant-major, 3 sergeants, 23 aerostat soldiers, 1 train quartermaster, 2 train corporals, 27 train soldiers, 1 trumpeter, 1 hospital attendant, and 8 riding horses. The machine section consists of 1 lieutenant, 2 sergeants, 6 aerostat soldiers, 1 corporal, and 2 train soldiers, making a total of 4 officers, 72 non-commissioned officers and men, and 8 horses. The following are the wagons and harness horses of the company:—13 wagons, 52 harness horses, and 2 reserve harness horses, to which must be added a fourgon and 4 horses for the generator, in all 14 wagons and 58 harness horses.—*Revue du Cercle Militaire*.

## NAVAL AND MILITARY CALENDAR.

JANUARY, 1898.

- 1st (Sat.) Fighting continued in the Khyber Pass.
- 3rd (M.) British occupation of Buna, West Africa, firmly established. Samory withdrew into the Kong country.
- 4th (T.) Publication, in the *London Gazette*, of Brigadier-General Elles' despatch regarding the operations near Shabkadr on 9th August, 1897.
- 5th (W.) 1st Bn. Seaforth Highlanders left Malta for Egypt in the "Nubia." One company of the Border Regiment left Malta for Cyprus in the "Nubia."
- 6th (Th.) Disturbances occurred among the Basutos, Cape Colony.
- " " Major-General W. F. Gatacre left England for Egypt to take command of the British Brigade in the Soudan.
- 7th (F.) Tanga Pass captured by the force under Brigadier-General Sir Bindon Blood, K.C.B.
- 10th (M.) Court-martial on Major Esterhazy commenced in Paris.
- " " Detachment of 21st Bombay N.I. left Bombay for the Persian Gulf, in connection with the murder of Mr. Graves, an English telegraph official.
- 11th (T.) Publication, in *London Gazette*, of despatches of Brigadier-Generals Sir B. Blood and E. N. Elles regarding the operations of the Malakand and Mohmand Field Forces.
- " " Major Esterhazy acquitted by Court-martial.



- 12th (W.) 5th and 9th Field Batteries arrived at Southampton in the "Nubia."  
 " " 1st Bn. P. W. O. Yorkshire Regiment embarked on the "Malta," at the Royal Albert Docks, for conveyance to Gibraltar.
- 13th (Th.) British Survey Party in Baluchistan attacked by a gang of marauders.  
 " " H.M. first-class battle-ship "Cæsar" commissioned at Portsmouth.
- 14th (F.) H.M.S. "Sirius" left Plymouth for Malta, with reliefs for "Surprise."
- 16th (S.) H.M.S. "Buzzard" arrived at Plymouth from West Indies.
- 21st (F.) Punitive force sent to Baluchistan under Colonel Mayne.  
 " " Launch of second-class cruiser "Kasagi" from Messrs. Cramp's Yard, Philadelphia, for Japanese Government.
- 22nd (Sat.) Launch of second-class cruiser "Chitose" from the Union Iron-works, San Francisco, for Japanese Government.
- 24th (M.) Launch of H.M. first-class cruiser "Argonaut" from the Fairfield Shipbuilding Yard, Govan-on-Clyde.  
 " " Launch of first-class cruiser "Hai-Chi" from the yard of Sir Wm. Armstrong and Co., Elswick, for the Chinese Government.
- 25th (T.) Publication, in *London Gazette*, of despatches from the General Officer commanding in Egypt.  
 " " H.M.S. "St. George" arrived at Portsmouth from the Cape of Good Hope.
- 26th (W.) H.M.S. "Hermione" paid off at Devonport.
- 28th (F.) Basuto rebellion ended.
- 31st (M.) H.M.S. "Victorious" left Portsmouth for the Mediterranean.

## FOREIGN PERIODICALS.

### NAVAL.

ARGENTINE REPUBLIC.—*Boletín del Centro Naval*. Buenos-Aires: November, 1897.—"Modern Torpedo-boat Destroyers." "Notes on a Cruise." "Some Remarks on the Training for Handling Ships and Squadrons." "The Next Naval War."

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens*. No. 2. Pola and Vienna: February, 1898.—"Some Statistical Returns on the Growth of Fleets." "The Progress in Armour and Naval Guns during 1896." "The Proposed Scheme for Increasing the German Fleet." "The Electric-boat 'Planté.'" "Naval Notes."

FRANCE.—*Revue Maritime*. Paris: December, 1897.—"Sixth Contribution to the Geometry of Naval Tactics." "Development of Navies during the Last Ten Years." "A Silent Steam Escape for Steam-boats." "Questions on Naval Tactics." "Water-tube Boilers in Ships-of-War." "Naval Notes." "The Sea Fisheries."

*Le Yacht*. Paris: 1st January, 1898.—"The Most Advantageous Dimensions for Battle-Ships." "Placing the Heavy Guns on board the 'Masséna.'" "Yachting Notes." "The first-class Torpedo-boat No. 156." "Results of the Employment of Aluminium in the Construction of the 'Defender.'" 8th January.—"The Navy and its *Rôle* in time of Peace." "Yachting Notes." "Departure of the German Reinforcements for the China Squadron" (with photographs). "The first-class cruiser 'Edgar'" (with photograph). 15th January.—"The Navies in 1897." "Two cases of good handling of their Ships by our Officers." "Yachting Notes." "The Conditions of Life on board Modern Ships." 22nd January.—"The Navies in 1897" (*continued*). "Yachting Notes." "The new Austrian coast-defence battle-ship 'Buda-Pest.'" "The Conditions of Life on board Modern Ships-of-War" (*concluded*). 29th January.—"The Crisis in Promotion in the Navy." "Yachting Notes." "The Navies in 1897." "The new Torpedo-boat Destroyers of the 'Fauconneau' type."



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*La Marine Française.* Paris: 15th January, 1898.—"Naval Policy and German Strategy." "The Promotions of 'Officiers de Vaisseau' and the Reform of the Administrative Branches." "The Petty Officers of the Dock-yards." "The German Manœuvres of 1897 in the Baltic and North Sea." "The Role of the Navy in Modern Wars." "The French Postal Service to New York." "Rachgoun as a Military and Commercial Port." "The Crisis in the Merchant Navy" (*continued*).

GERMANY.—*Marine Rundschau.* Berlin: February, 1898.—"The Determination of Latitude and Longitude in Cloudy Weather and at other times." "A Critical Examination of the Practical Advantage of Using High-Steam Expansion for Driving Steam Engines." "Submarine Explosions." "The New Kaiser Harbour at Bremerhaven" (with plan). "Naval Instructions of Three-hundred Years Ago." "The Rate of Revolution in Marine Engines." "Naval Notes."

ITALY.—*Rivista Marittima.* Rome: January, 1898.—"Our Crews." "Speed of Ships-of-War." "The Imperial German Navy." "Fourth Contribution to Naval Kinematics." "The Condition of the Italian Mercantile Marine." Letters to the Director:—"On Above-water and Submerged Torpedo-tubes." "On Engagements between Ships." "Naval Notes, Home and Foreign." "Notice of Books" (plate). "The Brazilian ironclad 'Almirante Barroso.'"

SPAIN.—*Revista General de Marina.* Madrid: January, 1898.—"Mechanical Torpedoes" (*continued*). "United States Naval Artillery." "The Names of Ships." "The Naval Station of Bongao and the Reform of the Jolo Protocol." "The Cost of War-ships." "The Development of the Torpedoman." "International Congress of Engineers and Naval Constructors." "The Proposed Naval College." "The Programme of Studies in Naval Schools." "Conclusion of the Vocabulary of Powders and Explosives." "The Entrance into the Navy."

#### MILITARY.

AUSTRIA-HUNGARY.—*Militär-Zeitung.* Vienna: 5th January, 1898.—"The Officers' Period of Service." "Proposed German Military Penal Regulations." "The Cavalry Sabre." "Experiments in Firing at Armour Plates in France, Russia, and England." 13th January.—"A German View of Austrian Officers' Mess Arrangements." "Field-Marshal Baron von Schönfeld." "Naval Reform in China." 21st January.—"How Much Longer?" (*re Czech Antagonism*). "Attack Exercises in Italy." 29th January.—"The Leaders of the French Army" (Saussier, Jamont, Boisdeffre). "Questions of Schools and Teachers."

*Mittheilungen über Gegenstände des Artillerie- und Genie-Wesens.* Vienna: January, 1898.—"Calculation of Initial Velocity." "Water Supply and Filter Arrangements." "The Testing of Arches." "The Loading of Bridging Materials." "Testing Waterproof Material." "The Reduction of Water in Artesian Wells by increasing their number with a limited space."

FRANCE.—*Revue du Cercle Militaire.* Paris: 1st January, 1898.—"The Service of Security in War." "The International Military and Naval Exhibition in 1900."

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*Revue d'Artillerie*. Paris: January, 1898.—"Studies on Remounts." "Notes on the Organisation of the Artillery in Italy." "Spanish Mountain Artillery Material." "Electric Units."

*Revue Militaire de l'Étranger*. Paris: January, 1898.—"The Turco-Greek War of 1897" (*continued*). "The German Imperial Manœuvres in 1897" (*continued*). "Re-engagement of Under-officers in Austria-Hungary." "Augmentation of the Cavalry and Artillery in Bulgaria."

*Journal des Sciences Militaires*. Paris: January, 1898.—"The Danger of Militias" (*continued*). "The Organisation of the Principal Line of Defence of an Entrenched Camp." "Considerations on Army Organisation." "The Ground, the Men, and the Weapons in War" (*continued*). "A Tactical Study of a Specific Case." "The Construction of Maps in Relief."

*Revue du Génie Militaire*. Paris: January, 1898.—"Historical Study on the Corps of Engineers" (*concluded*). "The Delimitation of the Sea Coast." "On the Employment of Balloons in Fortresses." "Afghan Towers."

*Revue du Service de l'Intendance Militaire*. Paris: September and October, 1897.—"International Law in Time of War." "The Ingredients of Buckwheat." "The Bread Supplied to Paris Hospitals." "Brief Account of the Algerian Expedition." "Extracts from Reports of United States Consuls on the Cultivation of Coffee." "Studies on Refrigerators."

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"The New German Tactics as described by a French Officer" (*continued*). 22nd January.—"In the Time of Frederick." "The Decisive Action of Spichern." 26th January.—"In the Time of Frederick" (*continued*). "The Decisive Action of Spichern" (*concluded*). "Once More: the Solution of the Attack Problem." "Drinking Toasts with 'Hurrah.'"

*Deutsche Heeres-Zeitung*. Berlin: 1st January, 1898.—"Attack Exercises in Italy." "The Episode at Briccon on the 25th December, 1870." "The Influence of Occupation and Social Conditions on Physical Development." 5th January.—"The Fashionable Equipage." "The Lombok Expedition." 8th January.—"The Lombok Expedition" (*continued*). 12th January.—"China." "The Italian Army." 15th January.—"Our Lines of Defence in 1870." "The Lombok Expedition" (*continued*). 19th January.—"Universal History in Outline." "The Lombok Expedition" (*continued*). 22nd January.—"Handbooks of Instruction." "The Lombok Expedition" (*continued*). 28th January.—"The French Naval Programme for 1898." "The Lombok Expedition" (*concluded*). 29th January.—"Modern Small-arms and Shooting." "The Evacuation of Orleans and the New Army of the Loire."

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*Internationale Revue über die gesammten Armeen und Flotten*. Dresden: January, 1898.—"Congress of the International Red Cross in September, 1897." "Yellow Fever and Plague carried by Ships." "The Russian Grand Manœuvres at Bielostok." "Drill of the Russian Cavalry in Crossing Rivers." "Napoleon's Grand Army." "The British Army and Navy." "The Social Duties of an Officer." "The Disturbances in the North-West of India." "Competition in the Far East."

ITALY.—*Rivista di Artiglieria e Genio*. Rome: December, 1897.—"Brown's Asynchronous Monophase Motor" (with three figures). "Secondary Ballistic Tables." "Lightning Conductors and the New Regulations for fitting them on Military Buildings." "The Operations around Borgoforte in 1866." Miscellaneous:—"Siege and Fortress Artillery of Austro-Hungary." "Proof Trials of Armour and Projectiles at Spezia." "Corrections of Coast Gun Practice in Russia." "Stereoscopic Binocular with Telemeter." "Rohr Apparatus for Reducing Recoil of Guns." "The Parseval Balloon Kite." "Military Notices." "Notices of Books," etc.

*Rivista Militare Italiana*. Rome: 1st January, 1898.—"In Defence of Small Men." "A New System of Tents for Troops." "Cavalry in 1897." "Military Cycling at end of 1897." "Politico-Military Notes." 16th January.—"Some Considerations on the Servo-Bulgarian War of 1885." "The English Campaign on the North-West Frontier of India." "The Disembarkation of a Corps of Operations on a Hostile Coast." "Politico-Military Notes."

RUSSIA.—*Voënnii Sbórník*. St. Petersburg: January, 1898.—Has not been received.

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"Practical Operations against the Insurgents of Carite." "Notes on some Cements of the Province of Gerona." "The Bridges-Lee Photo-Theodolite."

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 "Repeating Rifles in War." "Field Instructions." "American Lectures."  
 "Military Funeral Honours." 15th January.—"The Campaign in Cuba: The  
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SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: January, 1898.—"The  
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*The Life of Sir Stamford Raffles.* By DEMETRIUS C. BOULGER. London:  
 Horace Marshall and Son, 1897.

Stamford Raffles is, perhaps, one of the most interesting personalities amongst the many great administrators who, as servants of the East India Company, aided in building up the mightiest Empire that a white race has ever created in the Orient. Born in 1801, he entered the India Office, in a subordinate capacity, as a youth of fourteen. Ten years later he was, on the strong recommendation of Mr. Ramsay, then secretary of the East India Company, appointed to the post of assistant secretary to the Governor of the Company's settlement at Penang, or Prince of Wales's Island. It was great promotion for one so young, for the post carried with it a salary of £1,500 a year, and gave its holder the rank of a junior merchant in the East India Company's service. The lying jade gossip had it that this great advancement was given to Raffles for his conveniently relieving his superior of a mistress of whom he had grown tired, or who had been too exacting, but this libellous rumour Mr. Boulger once and for all definitely refutes. This appointment gave Raffles the opportunity to show what was in him. Probably no finer Oriental linguist than Raffles ever served this country, and during the five years he was at Penang he made himself such a master of the Malay language, and such an authority on the ways and customs of the Malay races, that when, in 1811, Lord Minto—influenced largely by Raffles' advice and judgment—determined on the Java expedition, it was to the ex-clerk of the India Office that the governorship of the new dependency was entrusted. How he governed it, and how broad, sound, and statesmanlike was the policy he aimed at carrying into effect can best be illustrated by his biographer's own words:—

"In the Malay Peninsula itself he conceived it possible to render the British authority paramount by a timely alliance with Siam, in return for which that country might be induced to abstain from further interference. New settlements were to be formed in Borneo. . . . Nor were Canton and Japan overlooked. The Dutch residents in Japan, and the corps of Japanese interpreters who knew Dutch, were to be brought over to English interests, however high the price might be. . . . The Governor-General would be the head of a great confederacy of Malay States."

Such were Raffles' ideals, and such a magnificent policy he would have successfully carried out had not Castlereagh concluded the convention with the Dutch, binding England to return to Holland all the Eastern possessions she held on the 1st of January, 1803, and thus allowing Java to pass from the British rule. This was in 1814, and, his appointment ceasing, Raffles took a well-earned holiday home, returning to the East three years later to be Resident of the Company's Settlement of Benevolin in Sumatra. Here he remained, doing



the best for Sumatra, as he had done for Java, until in 1819 the crowning work of his career was embarked upon in the founding of the glorious colony of Singapore. To Raffles we owe it that

"East and West must seek my aid,  
Ere the spent year may dare the ports afar;  
The second doorway of the wide world's trade  
Is mine to loose or bar."

This, in brief outline, is the life-story of one who was indeed one of England's greatest sons. At this time, when events in the Far East are so much in the public mind, the biography of Sir Stamford Raffles is sure to meet with serious attention. It is, however, to be regretted that unstinted praise cannot be given to the writer of the biography. He has made his book a good one, but he has certainly not made it a readable one. The book shows evidence of great pains in its composition, is complete and authentic, but it is too diffuse. There is too much of it. Extracts and letters which might with ease have been succinctly summarised fill pages, and wading through them annoys the reader. If the book were half the size it would be a better book.

*Tactics of the Drill Books.* By Major C. J. MORRISON, 1st (Royal) Dragoons.  
London: Harrison and Sons, 59, Pall Mall, S.W.

Major Morrison is to be congratulated on bringing out a very readable book on Tactics, and, in spite of the large number of works on the subject which have appeared within the last few years, a ready sale may be predicted for his unpretentious little work.

To begin with, the style is clear and grammatical, if now and then a little turgid and grandiloquent. From end to end there is hardly a sentence of doubtful English, and this is more than can be said of most of the military works which have lately seen the light.

It would be as well if Major Morrison were to prune a sentence here and there in his next edition. It is a pity to use a "mouth-filling" phrase which means nothing, when simple words will suffice. For example, on page 48 "quit" or "withdraw" might be used for "emancipate himself," and at the bottom of page 96 "at short range" would surely be better than "from position in his immediate vicinity." But this is a minor criticism, and the value of Major Morrison's book must be admitted. The chapters on cavalry, artillery, infantry, and the three arms in combination, are excellent, and that on reconnoitring is a praiseworthy and successful attempt to make the Cavalry Drill Book on this subject intelligible.

There is an obvious slip on page 12, where two mules marching abreast are said to require 8 *yards* of road space.

There is one other criticism to offer. As Major Morrison calls his book "*Tactics of the Drill Books*," it is hardly open to him to put out crotchets of his own as accepted facts. These may be of the nature of valuable suggestions, but if the drill books are innocent of them it would be better to say so. Several instances of this sort occur in the chapter on outposts. The drill book does not say that "by night group sentries should invariably be posted in pairs." The essence of the group system is that the sentry is supported by a group close at hand, and the chief difference between the group system and the *Cordon* system is, that the sentries are single in the former, except "under certain conditions," perhaps very thick country, or very close weather, or in dealing with wily savages of the Zulu type.

Where Major Morrison goes flat in the face of the drill book, it would certainly seem that he ought to say so, and not mislead the unwary, who may be counting on the accuracy of his quotations.

Again there is no intention to do away with connecting sentries. In some cases where the piquet cannot be seen from the sentry line, a connecting sentry



would be a necessity. In another edition Major Morrison would do well to make it clear to the reader where his statements do not rest on any authoritative basis.

Major Morrison does not fall into what must be regarded as a mistake of General Clery's in interlarding his book with numerous examples picked out of an infinite number of campaigns—closely following Jomini. It is difficult to see the value to the student of vague illustrations drawn from campaigns which he can never have read. But Major Morrison must not expect his book to take the place of "Clery's Minor Tactics" as a text-book for the learner, unless he adds to it, by way of supplement or otherwise, some chapters on the attack and defence of rivers, villages, and woods, to say nothing of defiles and convoys. Still, the book is to be welcomed as a distinct advance, and as a well-conceived attempt to bring together in one compact little volume a clear digest of the drill books of all three arms. The tactical examples might usefully be added to in future editions.

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*Twelve Indian Statesmen.* By GEORGE SMITH, C.I.E. 8vo. London: 1897.

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*Military Expeditions beyond the Seas.* By Colonel G. A. FURSE, C.B. 2 vols. 8vo. London: 1897.

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*The French War of 1512-13.* Navy Records Society. 8vo. London: 1897.

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*Letters on Applied Tactics.* By Major GRIEPENKERL. Translated by a Retired Officer. 8vo. London: 1897.

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*The Battle-fields of Thessaly.* By Sir E. A. BARTLETT, M.P. 8vo. London: 1897.

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*South Africa of To-Day.* By Captain F. YOUNGHUSBAND, C.I.E. 8vo. London: 1897.

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*Tactics as applied to Schemes.* By Major I. SHERSTON, D.S.O. 8vo. London and Calcutta: 1897.

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*La Campagne de 1814.* By G. BERTIN. Small 8vo. Paris: 1897.

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*L'Épopée des Zouaves.* By Lieutenant BURKARD. 2 vols. Small 8vo. Paris: 1897.

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*Historical Records of the Maltese Cross of the British Army.* By Major A. G. CHESNEY. 8vo. London: 1897.

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*Ten Years of Upper Canada in Peace and War, 1805-15.* 8vo. M. EDGAR. Toronto: 1890.

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*Memoirs of Baron Lejeune, Aide-de-Camp to Marshals Berthier, Davout, and Oudinot.* Translated from the French by Mrs. A. BELL. 2 vols. 8vo. London: 1897.

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49th	A. G. Lind.....	1,700
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"	A. C. Mackinnon.....	1,379
"	M. M. H. Neville.....	1,285
"	C. S. Dixon.....	1,273
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